Draft Environmental Assessment and
Draft Environmental Impact Report
(EEA No. 16640)

CAPE COD GATEWAY AIRPORT

MASTER PLAN IMPROVEMENT PROJECTS

DECEMBER 15, 2023

This Environmental Assessment becomes a Federal document when evaluated, signed and dated by the responsible FAA official.

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CAPE COD GATEWAY AIRPORT

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LIST OF ACRONYMS

AAC	Aircraft Approach Category
AADT	Annual Average Daily Traffic
AAGR	Average Annual Growth Rate
AARFF	Aircraft Rescue and Fire Fighting
AC	Advisory Circular
ACBM	Asbestos Containing Building Materials
ACEC	Area of Critical Environmental Concern
ACM	Asbestos Containing Materials
ADC	Air Data Computer
ADG	Airplane Design Group
AED	Adult Entertainment District
AEDT	Aviation Environment Design Tool
AFFF	Aqueous Film Forming Foam
AIP	Airport Improvement Program
ALP	Airport Layout Plan
AMA	Aero Management Association
AMP	Airport Master Plan
APE	Area of Potential Effect
ARC	Airport Reference Code
ARFF	Airport Rescue and Fire Fighting
ASAPP	Archaeological Site Avoidance and Protection Plan
ASDA	Accelerated Stop Distance Available
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
ATC	Air Traffic Control
ATCT	Airport Traffic Control Tower
ATF	Aerodrome Traffic Frequency
ATR	Automatic Traffic Recorder
AUL	Activity Use Limitation
AVGAS	Aviation Gasoline
AVO	Average Vehicle Occupancy
BBJ	Boeing Business Jets
BMP	Best Management Practices
BTEX	benzene, toluene, ethylbenzene, and xylene
BVW	Bordering Vegetated Wetlands
BWC	Barnstable Water Company
BWSC	Bureau of Waste Site Cleanup
CAA	Clean Air Act
CATEX	Categorical Exclusions
CCC	Cape Cod Commission
CCF	Centum Cubic Feet

LIST OF ACRONYMS (CONTINUED)

CCGA	Cape Cod Gateway Airport
CCGAC	Cape Cod Gateway Airport Commission
CCRT	Cape Cod Rail Trail
CCRTA	Cape Cod Regional Transit Authority
CCTA	Cape Cod Regional Transit Authority
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGP	Construction General Permit
CIP	Capital Improvement Plan
CMP	Construction Management Plan
CMR	Code of Massachusetts Regulations
CO	Carbon Monoxide
COC	Contaminants of Concern
CSA	Comprehensive Site Assessment
CVP	Certified Vernal Pool
CWA	Clean Water Act
CY	cubic yards
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
dBA	decibels A
DC	Direct Current
DEIR	Draft Environmental Impact Report
DER	Division of Ecological Restoration
DFW	Division of Fisheries and Wildlife
DGA	Designated Geographic Area
DME	Distance Measuring Equipment
DNL	Day Night Average Sound Level
DOT	Department of Transportation
DPH	Department of Public Health
DPS	Downgradient Property Status
DRI	Developments of Regional Impact
EA	Environmental Assessment
EDR	Environmental Data Resources
EEA	Energy and Environmental Affairs
EH	Estimated Habitat
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EJ	Environmental Justice
EMAS	Engineered Material Arresting System
ENF	Environmental Notification Form
EO	Executive Order

LIST OF ACRONYMS (CONTINUED)

EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
EV	Electric Vehicles
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FBO	Fixed-Base Operator
FCTV	Falmouth Community Television
FEMA	Federal Emergency Management Agency
FFRMS	Federal Flood Risk Management Standard
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
Ft	Feet
GA	General Aviation
GHG	Greenhouse Gases
GIS	Geographical Information Systems
GPD	Gallons per day
HA	Health Advisories
HB	Highway Business
HG	Hyannis Gateway
HIRL	High Intensity Runway Edge Lights
HTC	Hyannis Transportation Center
HWG	Horsley Witten Group
HYA	Cape Cod Gateway Airport
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IND	Industrial
IRA	Immediate Response Action
ISI	Initial Site Investigation
ISO	Independent System Operator
JBCC	Joint Base Cape Cod
LBP	Lead Based Paint
LBW	Low Birth Weight
LDA	Landing Distance Available
LF	Linear Feet
LSP	License Site Professional
LTBI	Location to be Investigated
LUHPPL	Land Uses with Higher Potential Pollutant Loads
LUW	Land Under Water
MALSF	medium intensity approach lighting system with sequenced flashers
MALSR	medium intensity approach lighting system with runway alignment indicator lights

LIST OF ACRONYMS (CONTINUED)

MassDEP	Massachusetts Department of Environmental
MBTA	Massachusetts Bay Transit Authority
MC-FRM	Massachusetts Coast Flood Risk Model
MCL	Maximum Contaminant Level
MCP	Massachusetts Contingency Plan
MEMA	Massachusetts Emergency Management Agency
MEPA	Massachusetts Environmental Policy Act
MESA	Massachusetts Endangered Species Act
MHC	Massachusetts Historical Commission
MITL	Medium Intensity Taxiway Lights
MOHML	Massachusetts Oil and Hazardous Material List
MOS	Modification of Standards
MSGP	Multi-Sector General Permit
MSL	Mean Sea Level
MT	Metric Tons
MTCO2E	Million Tonnes of Carbon Dioxide Equivalent
MTOW	Maximum Takeoff Weight
MVP	Municipal Vulnerability Preparedness
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NAVAIDS	Navigational Aids
NDS	Not a Disposal Site
NEM	Noise Exposure Maps
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Pollutants
NFA	No Further Action
NHESP	No Further Action
NLEB	Northern Long Eared Bat
NM	Nautical Mile
NMFS	Natural Heritage and Endangered Species Program
NO	Northern Long Eared Bat
NO2	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOR	Notice of Responsibility
NPDES	National Pollutant Discharge Elimination System
NPIAS	National Plan of Integrated Airports System
NRCC	Natural Resource Conservation Service
NRCS	Natural Resource Conservation Service
NRI	Nationwide Rivers Inventory
NWSR	National Wild and Scenic River System

LIST OF ACRONYMS (CONTINUED)

O3	Ozone
OHM	Oil and Hazardous Materials
ORW	Outstanding Resource Waters
OWS	Oil Water Separator
PAH	Polycyclic Aromatic Hydrocarbons
PAPI	Precision Approach Path Indicators
PAVE	Perimeter Acquisition Vehicle Entry
PAWS	Phased Array Warning System
Pb	Lead
PFAS	Per- and polyfluoroalkyl substances
PFBS	Perfluorobutanesulfonic acid
PFDA	Perfluorodecanoic Acid
PFHpA	Perfluoroheptanoic Acid
PFHxS	Perfluorohexanesulfonic Acid
PFNA	Perfluorononanoic Acid
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
PH	Priority Habitat
PM	Particulate Matter
PSC	Permanent Solution with Conditions
PSNC	Permanent Solution with no Conditions
PV	Passenger Vehicle
PVP	Potential Vernal Pools
RAO	Response Action Outcome
RCS	Reportable Concentration for Soil
RDC	Runway Design Code
RMAT	Resilient MA Action Team
RNF	Release Notification Form
ROFA	Release Notification Form
RP	Runway Object Free Area
RPP	Regional Policy Plan
RPZ	Runway Protection Zones
RSA	Runway Safety Area
RTN	Release Tracking Number
RVR	Runway Visual Range
RVZ	Runway Visibility Zone
RWY	Runway
SEL	Sound Exposure Level
SF	square foot
SHMCAP	State Hazard Mitigation and Climate Adaptation Plan
SHPO	State Historic Preservation Officer

LIST OF ACRONYMS (CONTINUED)

SIP	State Implementation Plan
SMART	Strengthening Mobility and Revolutionizing Transportation
SMS	Stormwater Standards
SO2	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SRE	Snow Removal Equipment
SSA	Sole Source Aquifer
SSC	Species of Special Concern
SW	Southwest
SWPPP	Stormwater Pollution Prevention Plan
SY	Square Yards
TCDS	Traffic Count Database System
TDG	Taxiway Design Group
TDM	Transportation Demand Measures
TFMSC	Traffic Flow Management System Counts
THPO	Tribal Historic Preservations Office
TLOFA	Taxilane Object Free Areas
TNC	Transportation Network Company
TODA	Takeoff Distance Available
TOFA	Taxiway Object Free Area
TORA	Takeoff Run Available
TPH	Total Petroleum Hydrocarbons
TRI	Toxic Release Inventory
TSA	Taxiway Safety Areas
TSA office	Transportation Security Administration
TSS	Total Suspended Solids
TWY	Taxiway
UHI	Urban Heat Island
UIC	Underground Injection Control
URAM	Utility Release Abatement Measure
US	United States
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tanks
VFR	Visual Flight Rule
VMT	Vehicle Miles Travelled
VOC	Volatile Organic Compounds
WMA	Wildlife Management Area

LIST OF ACRONYMS (CONTINUED)

WP	Wellhead Protection
WPA	Wetlands Protection Act
WQC	Water Quality Certification
WSS	Web Soil Survey
WWTP	Wastewater Treatment Plant

Chapter 1.0

Introduction

1.0 INTRODUCTION

Cape Cod Gateway Airport Commission (the Commission) proposes to implement a series of airport improvement projects identified in the Federal Aviation Administration (FAA)-approved 2022 Cape Cod Gateway Airport Master Plan Update (the Projects). The 2022 Master Plan Update provides a framework to guide future Airport development that will enhance safety, cost-effectively satisfy current and future aviation demand, meet FAA standards for airport design and geometry for the families of aircraft that use the airport for corporate, military, small general aviation, large general aviation, medical evacuation, light sport, and commercial/air taxi/charter services, while considering potential environmental and socioeconomic impacts.

The Cape Cod Gateway Airport (HYA or the Airport) is located in the village of Hyannis in the Town of Barnstable, Massachusetts, and is owned and operated by the Town of Barnstable as an Enterprise Fund within the Town of Barnstable (see Figure 1.1-1). As such, the Airport sets rates and charges for the services offered to cover its operating expenses. The Town of Barnstable's General Operating Fund and citizen taxes are not used to operate the airport or to supplement funding for the Airports operation. As the owner and operator, the Town of Barnstable is also identified by the FAA as the designated Sponsor of the airport and accepts federal and state grants and the associated grant assurances. The Airport also serves as an important regional transportation hub to area attractions and recreational venues and provides a key role in emergency response activities. The Airport is identified in the National Plan of Integrated Airports System (NPIAS) with a service level of Non-Hub Commercial Service.

The analysis presented in this joint Draft Environmental Assessment and Draft Environmental Impact Report (Draft EA/EIR) refines the projects recommended in the Master Plan and provides a focused analysis of environmental impacts and proposed mitigation measures of these Projects. This document has been prepared in accordance with FAA Order 1050.1F, Environmental Impacts: Policies and Procedures, FAA's 1050.1F Desk Reference, and FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions, the MEPA Certificate on the Environmental Notification Form dated January 23, 2023 (**Appendix A**) and MEPA Regulations (301 Code of Massachusetts Regulations [CMR] 11.07), and most importantly, feedback and comments received through the public engagement process.

The proposed Projects are based on the recent 2022 Airport Master Plan (AMP) and Airport Layout Plan (ALP). The AMP and ALP serve as the framework for planning future development at the Airport and identify not only airport components that do not meet current design criteria established by the FAA, but also address forecasted demand, capacity requirements, and operational improvements . The previous ALP update was conducted as part of a Master Plan Update in 2008, and since then the Airport has undergone several changes in the form of facilities, operations, and other issues that need to be formally documented. The 2022 AMP and ALP allow for the planning necessary to preserve the Airport's role in the state, region, and national transportation system and to reaffirm and maintain the future function of the Airport.

This Draft EIR/EA will provide a brief description of the Airport and contents in the EA/EIR (Chapter 1.0); a discussion of the purpose and need for the Proposed Action (Chapter 2.0); a description of the Proposed Projects (Chapter 3.0); an overview of the identification and screening of alternatives considered as part of the environmental evaluation process (Chapter 4.0); a description of existing

environmental conditions within the Project and general study areas (Chapter 5.0); an evaluation of the environmental impacts associated with the Proposed Action, the No Action alternative, and other alternatives considered for analysis (Chapter 6.0); mitigation or avoidance/minimization measures (Chapter 7.0); a description of compliance with applicable federal, state, and local regulations (Chapter 8.0); coordination and public involvement associated with the EA/EIR process (Chapter 9.0); responses to comments received during the MEPA public comment period (Chapter 10.0); and a list of individuals involved in preparing the EA/EIR (Chapter 11.0).

The Proponent began outreach efforts in October 2022 and continues to engage the public and interested stakeholders through a series of virtual and in person public meetings and feedback opportunities during the environmental review process. The Airport has assembled a communications and outreach team to enhance public participation as part of the EA/EIR process. Public participation is a key tenant throughout the entire EA/EIR process, providing opportunities for the public to receive information on the proposed Projects as well as to provide feedback and comments to the Airport. Outreach and public participation opportunities have been provided in addition to the regulatory required public meetings and comment periods.

A list of past meetings is provided in **Table 1.1-1**. Additional details are provided in Chapter 9.0 regarding all public outreach efforts.

Table 1.1-1 Public Meetings and Outreach Efforts

Date	Outreach/Meeting	Description
October 27, 2022	Public Meeting #1	Public meeting held at the Airport to introduce EJ communities to the Projects and answer questions and comments.
November 30, 2022	Environmental Notification Form	Noticed in Environmental Monitor on December 7, 2022. 30-day review period with agency and public comment period through January 12, 2023
January 5, 2023	MEPA Site Visit & Public Meeting#2	Meetings were held both in person at the airport and virtually at separate times.
June 21, 2023	Public Meeting #3	Meetings were held both in person at Barnstable Town Hall in the afternoon and virtually in the evening.
December 12, 2023	Public Meeting #4	Meetings will be held both virtually in the afternoon and at Barnstable Town Hall in the evening.

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

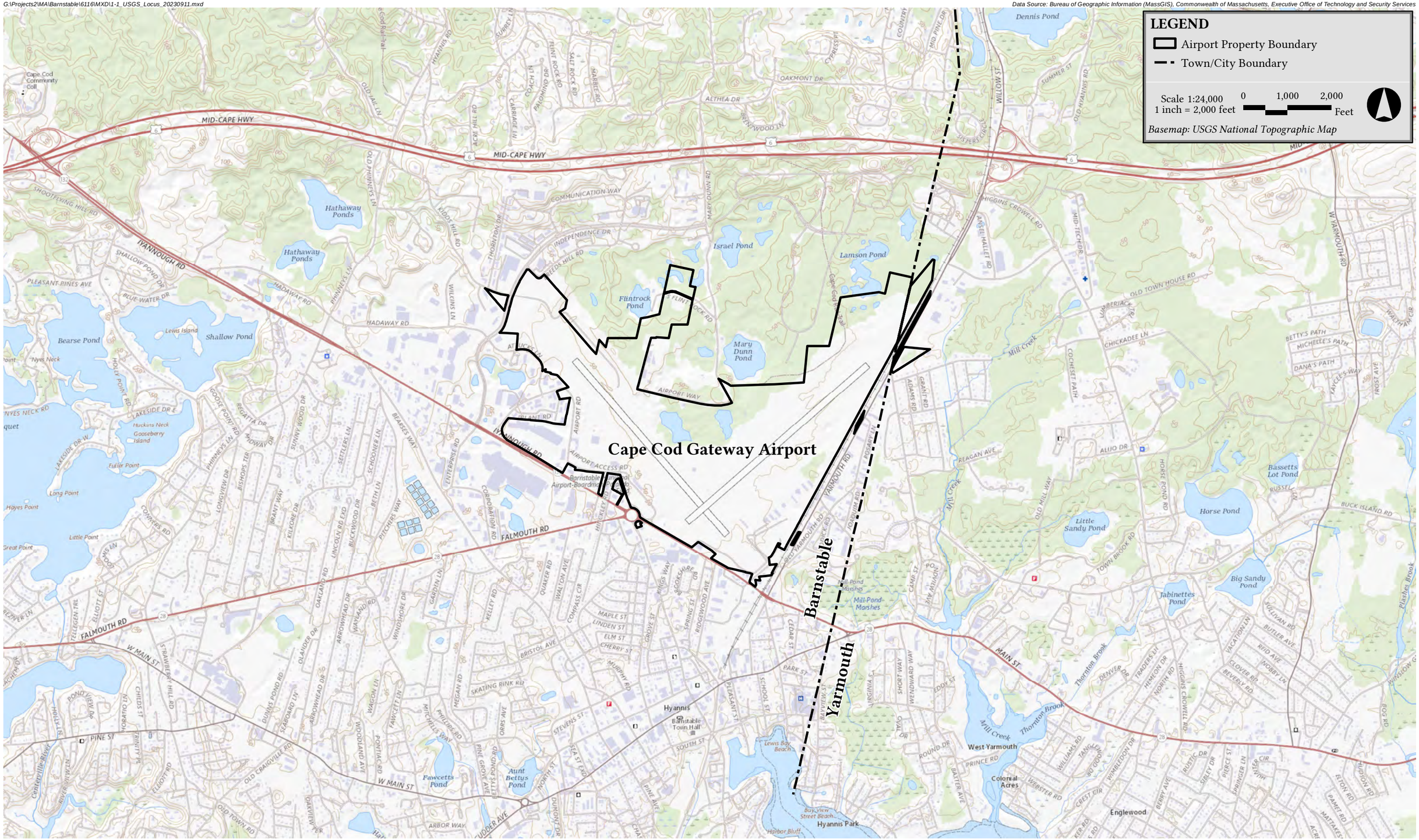

Figure 1.1-1
USGS Locus Map

1.1 2022 Cape Cod Gateway Airport Master Plan Background

Public-use airports periodically conduct Master Plan update planning in conjunction with the FAA and state aeronautical agencies (Massachusetts Department of Transportation Aeronautics [MassDOT Aeronautics]) to identify critical airport development needs, determine funding, and plan construction scheduling for future projects. The 2022 Master Plan identified a list of recommendations for airside and landside safety and efficiency enhancements needed to meet current and future needs of the airport. The recommendations developed during the Master Plan Update planning process are reviewed and approved by FAA and MassDOT Aeronautics before they can proceed to subsequent phases including environmental review and permitting.

As part of its Master Plan long-term planning efforts, the Airport evaluated its current infrastructure for compliance with FAA design standards and ability to meet safety and efficiency needs of the facility for existing and anticipated future users (see **Figure 1.1-2** Existing Airport Conditions). Aviation demand forecasts, facility requirements, Airport access, Airport geometry, and navigation aids over a 20-year planning horizon were assessed, resulting in the development of a list of recommendations for future airport infrastructure investments. Projects discussed in this document are those that have been identified as occurring in the reasonably foreseeable future, including those whose design and permitting will occur within the next 5-7 years. Master Plan projects that are to be implemented further into the future are identified herein with a * but not analyzed or discussed further unless noted and are summarized in Section 6.15, Cumulative Impacts. Master Plan Projects to be implemented over the next 20-year period include:

- Airside:
  - Runway 15 Extension;
  - Runway Safety Area Enhancements;* and
  - Taxiway Modifications;
- Landside:
  - Terminal Improvements;*
  - General Aviation (GA) Improvements; and
  - Non-Aeronautical Land Use Development Areas.
- Airspace Safety Improvements:
  - Runway Safety Area (RSA) and Runway Object Free Area (ROFA) Avigation Easements
  - Airport control over Runway Protection Zone (RPZ) Properties

In May 2022, the Proponent, MassDOT Aeronautics Division, and the FAA approved the Master Plan Update. Please see **Figure 1.1-3** for the locations of these proposed Projects.

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Cape Cod Gateway Airport **Barnstable, Massachusetts**

Figure 1.1-2
Existing Conditions

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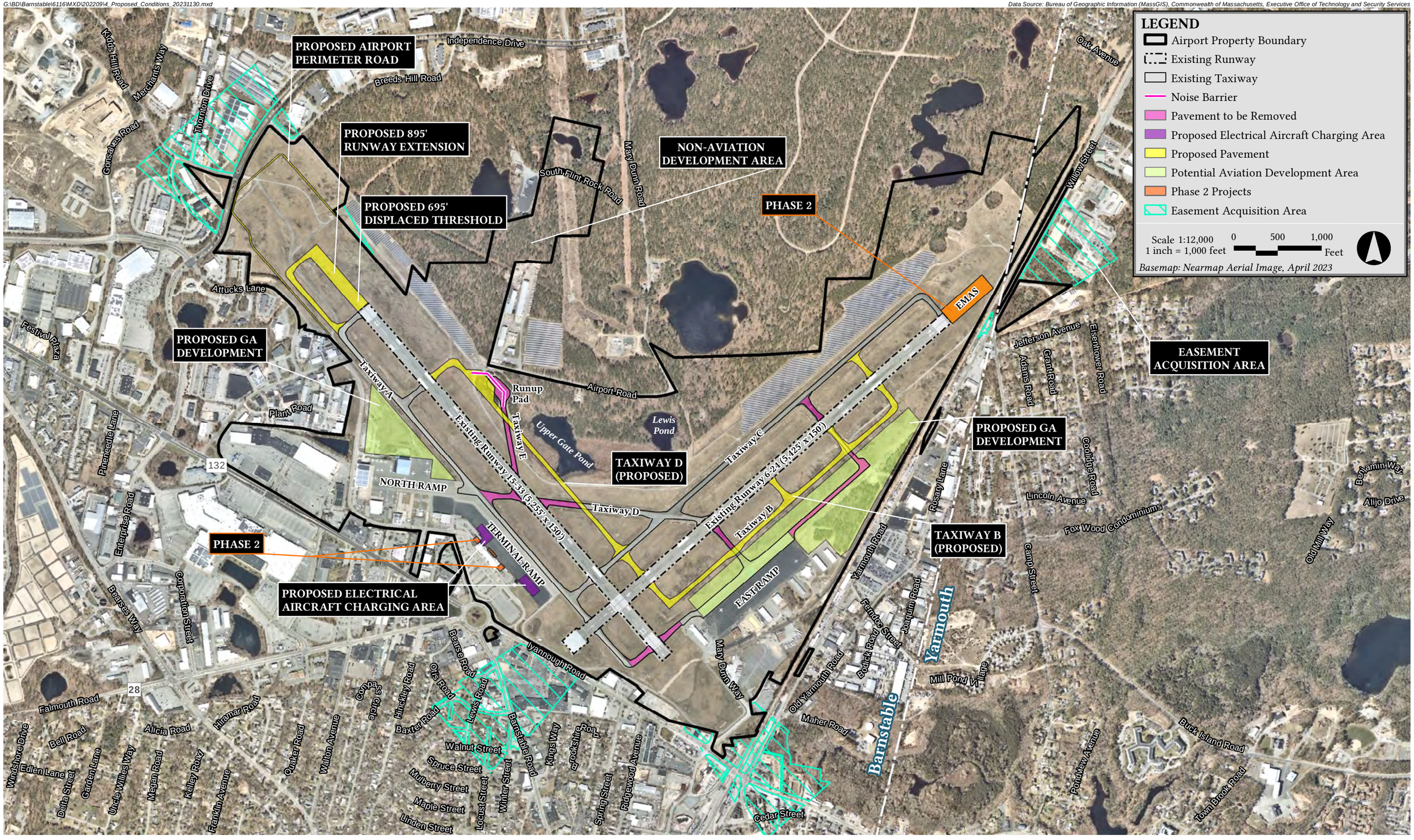
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Cape Cod Gateway Airport Barnstable, Massachusetts

Figure 1.1-3
Proposed Master Plan Projects

The Airport intends to apply all practicable mitigation measures to prevent, avoid, and minimize anticipated environmental impacts. Mitigation measures are discussed in greater detail in Chapters 6.0 and 7.0 of this document.

1.2 Purpose and Need

The Projects are designed to meet safety and efficiency standards for the aircraft family operating at the Airport, both currently and within future planning horizons, and to support the financial self-sufficiency of the Airport. The Projects are designed to meet the operational and efficiency requirements of the existing and future design Critical Aircraft as required by FAA.

As summarized below and with more detail provided in Chapter 2.0, the Airport is not seeking to meet airfield geometry standards for a larger class of aircraft but to meet recommendations for runway length and FAA safety and design criteria (for the current family of aircraft operating at the Airport) deficiencies such as runway length, taxiway configurations, and safety area geometry.

Determining an existing Critical Aircraft and a future Critical Aircraft are required by FAA during the master planning process to apply the most up-to-date FAA design criteria. The existing Critical Aircraft determination is based on current aeronautical use. For future Critical Aircraft, the determination is made based on an FAA-approved forecast that considers aircraft "highly likely" or "expected" to regularly use the airport (i.e., minimum 500 operations per year). Future Critical Aircraft may often be different than the existing Critical Aircraft, due to the airport's operational growth, and the industry's changes in fleet (e.g., retirement of older aircraft types), and the introduction of newer efficient aircraft. Airports with a stable fleet mix and operations, may have one aircraft type (or grouping with similar characteristics) for both the existing and future Critical Aircraft.

Airports should consider plans by operators to retire aircraft and replace them with new types. This is the case at HYA, with the imminent retirement of the Embraer 190 (E190) as operated by JetBlue as they transition to the Airbus 220 (A220) as well as Cape Air with the shift to the Tecnam P2012. To ensure the safety of future operations, the future Critical Aircraft determination must consider ongoing trends in the aircraft fleet. This consideration applies to both general aviation (particularly business aviation) and commercial airline operations. Based on the range of the most demanding aircraft that operate at HYA (described in detail in Section 2.2.1), two critical design aircraft were identified for HYA: one representing general aviation activities and one representing commercial service activities. The future general aviation critical aircraft remains the Gulfstream V/G500 while the future commercial design aircraft shifts to the Airbus 220 due to the indicated retirement of the E190 by Jet Blue.

The future design critical aircraft maintain the same approach speed category (C/D) and design group (III) as existing aircraft and there is no change in the design criteria requirements for the existing versus future design aircraft.

In general, proposed Projects are designed to address areas of airfield geometry that are either non-standard based on current FAA airport design criteria or are deficient for both the existing and the future critical design aircraft identified above. These improvement needs are detailed in **Table 1.2-1**. Landside improvements are proposed to better meet operational forecasts and Airport needs such as terminal improvements and hangar developments. In addition, the Airport is addressing future

needs of the Airport due to provided forecasts, changing markets resulting from industry-wide shifts in aviation, as well as more local travel nuances due to COVID- and post-COVID motivated behavioral shifts.

Table 1.2-1 Airfield Geometry Needs at Cape Cod Gateway

FAA Guideline	Airport Need	Design Criteria
Airfield Capacity	Existing capacity is only 12-27% of the maximum weight for Class C/III aircraft in wet pavement conditions	FAA AC 150/5300-13B – meet capacity to extent feasible to improve safety
Runway Length	Extend runway to meet existing design critical aircraft needs to 6,000 feet.	FAA AC 150/5325-4B Runway Length Requirements for Airport Design
Runway Width	Current conditions meet requirements	n/a
Direct Access to Runway	Taxiway D at RW 15-33	AC 150/5300-13B – remove direct access
Runway / Taxiway high energy intersections and/or low visibility	RWY 15-33 at TWYs D & E RWY 6-24 at TWY D (RWY 24 & RWY 6 departures) RWY 6-24 at TWYs B & C1	AC 150/5300-13B – remove non-standard angles and improve visibility
Runway Protection Zones (RPZ)	Areas within the RPZ may have current or future incompatible land uses.	Enhance airport control over RPZs for existing conditions and future runway length
Runway Safety Area (RSA) Improvements	Penetrations into safety areas and non-standard configurations	FAA AC 150/5300-13B, FAA Order 5200.8 – RSA Program
Runway Object Free Areas (ROFA)	Multiple penetrations	Existing modifications to standards need to be updated every 5 years per Order 5300.1G. Acquire easements as feasible.
Taxiway Object Free Areas (TOFA)	East Ramp contains areas with only clearances for ADG 1 aircraft	AC 150 5300-13B – Correct non-standard taxilane widths by east ramp through relocation of Taxiway B
General Aviation Hangars	Currently has waiting list of over 25 applicants	Identify additional areas of ramp space for hangar construction by relocating TWY B.

1.3 Airport Background (MEPA)

Cape Cod Gateway Airport (the Airport or "Project site") is located on Cape Cod in Hyannis, Massachusetts, one of seven villages in the Town of Barnstable (see **Figure 1.1-1** USGS Locus Map). The Airport is bordered by a Massachusetts Fish and Wildlife designated conservation area (Hyannis Ponds Wildlife Management Area) and Route 6 to the north, Barnstable Road (Route 132) to the south, Yarmouth Road to the east, and an industrial park (Independence Park) to the west. Access to the Airport is provided by state highway Route 28 and Route 132 (Iyannough Road), which connects Route 6 to the Airport. Local access to the Airport is provided by Hinckley Road, Barnstable Road, and Mary Dunn Way.

The Airport encompasses 639 acres of land, of which approximately 140 acres make up developed areas for Airport facilities and operations including runways, taxiways, an approximately 43,097 square foot (sf) Passenger Terminal Building, Air Traffic Control Tower (ATCT), parking facilities, aircraft ramps, hangars, an Airport Rescue and Fire Fighting (ARFF) building, and an aircraft fuel farm. The remaining approximately 460 acres of Airport property are undeveloped areas.

The Airport is owned by the Town of Barnstable and managed by the seven member Cape Cod Gateway Airport Commission and Airport staff. The Airport provides general aviation and both year-round and seasonal commercial services to Boston, New York, the islands of Martha's Vineyard and Nantucket, and beyond. It is home to Cape Air and Nantucket Airlines along with other charter, corporate, and general aviation aircraft operators. JetBlue operates daily seasonal service (May – October) to JFK-New York and LGA-New York. MedFlight operates out of the Airport, providing key emergency response medical services, along with the U.S. Coast Guard (USCG). More than 45 private tenants lease space at the Airport (see **Figure 1.3-1** Current Airport Facilities).

The leases and services offered at the Airport contribute to the economic output of the Airport and, more importantly, to Barnstable and the Cape Cod region as a whole. Cape Air is the third largest employer in Barnstable (behind only Cape Cod Hospital and the municipality itself).

Table 1.3-1 Economic Output of Airport

	Total Employment	Total Payroll	Total Output
Cape Cod Gateway	2,135	$85,358,000	$208,023,000

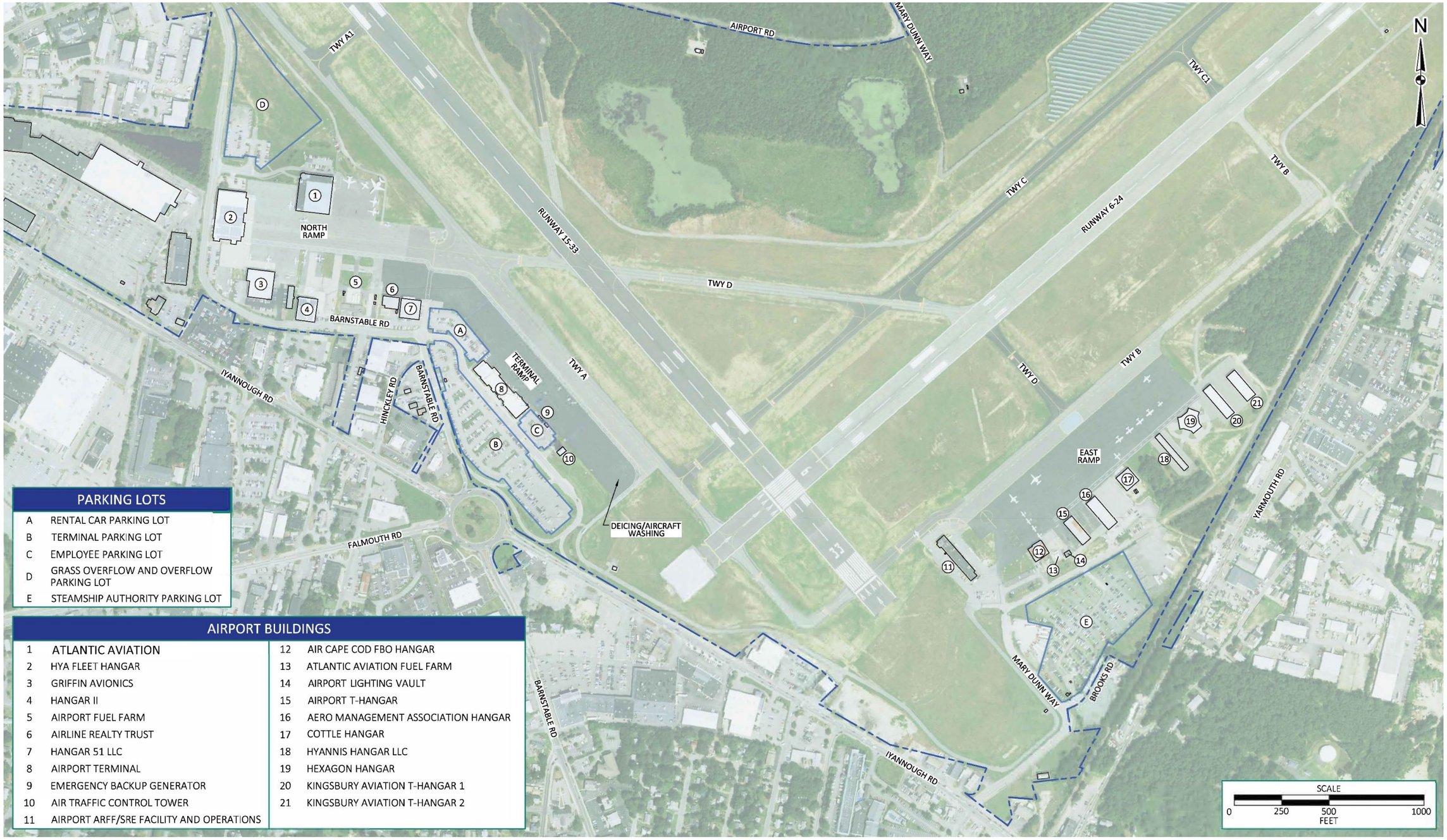
https://flyhya.com/wp-content/uploads/2021/08/MA-Statewide-Economic-Impact-Study_Exec-Summary-rdc.pdf

1.3.1 Airport History

The Airport, initially named Hyannis Airport, first opened as a single grass airstrip. The Airport saw the first landing on June 17, 1928. Scheduled air service began at the Airport on July 2, 1931. A plane left Hyannis at 7:45 a.m. every day, carrying five passengers to Boston. By 1937, an average of four planes were landing each day during the summer season. In the 1930s, the Town of Barnstable took ownership of the Airport and eventually renamed the Airport, "Barnstable Municipal Airport". The Airport gained popularity, seeing daily deliveries of the Boston Herald Traveler newspaper, and hosting numerous air shows, which attracted the public to the Airport.

In 1940, the Airport expanded to three 4,000-foot runways for armed forces use. The Navy assumed control of the Airport for pilot training during World War II, and after the war, the Airport reverted to its use as a municipal airport and resumed civilian flights in February 1946. In 1957, Runway 6-24 was extended to 5,600 feet and a new terminal was constructed and in 1961, a new ATCT was built.

Given increasing popularity and operations, the FAA and the Airport continued to improve infrastructure to accommodate capacity and ensure the safety of aviators and the public. In 2003, an Engineered Material Arresting System (EMAS) was installed at the end of Runway 6 to reduce the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.



PARKING LOTS	
A	RENTAL CAR PARKING LOT
B	TERMINAL PARKING LOT
C	EMPLOYEE PARKING LOT
D	GRASS OVERFLOW AND OVERFLOW PARKING LOT
E	STEAMSHIP AUTHORITY PARKING LOT

AIRPORT BUILDINGS			
1	ATLANTIC AVIATION	12	AIR CAPE COD FBO HANGAR
2	HYA FLEET HANGAR	13	ATLANTIC AVIATION FUEL FARM
3	GRIFFIN AVIONICS	14	AIRPORT LIGHTING VAULT
4	HANGAR II	15	AIRPORT T-HANGAR
5	AIRPORT FUEL FARM	16	AERO MANAGEMENT ASSOCIATION HANGAR
6	AIRLINE REALTY TRUST	17	COTTLE HANGAR
7	HANGAR 51 LLC	18	HYANNIS HANGAR LLC
8	AIRPORT TERMINAL	19	HEXAGON HANGAR
9	EMERGENCY BACKUP GENERATOR	20	KINGSBURY AVIATION T-HANGAR 1
10	AIR TRAFFIC CONTROL TOWER	21	KINGSBURY AVIATION T-HANGAR 2
11	AIRPORT ARFF/SRE FACILITY AND OPERATIONS		

Figure 1.3-1
Current Airport Facilities

This engineered system requires significantly less land area than a traditional runway safety area and was the first EMAS installed in New England. Improvements to the Airport infrastructure continued throughout the 2000s, and between 2011 and 2012, the Airport demolished the old ATCT and Terminal Building and constructed new facilities as part of a $40 million Airport Improvement Program(AIP).

In 2021, Barnstable Municipal Airport was renamed Cape Cod Gateway Airport to reflect the airport's role connecting air travel destinations to the Cape Cod region.

1.3.2 Airport Classification

The NPIAS 2023-2027, published in September 2022, identifies nearly 3,300 public-use airports that are included in the national airport system, the roles they currently serve, and the amounts and types of airport development eligible for federal funding under the AIP. NPIAS classifies Cape Cod Gateway Airport as a Primary Non-Hub Commercial Service Airport.

- **Primary Airports** are Commercial Service Airports that have more than 10,000 passenger boardings each year. Hub categories for Primary Airports are defined as a percentage of total passenger boardings within the United States in the most current calendar year ending before the start of the current fiscal year.
- **Non-hub** is defined as receiving less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanement (passenger boardings at airports that receive scheduled passenger service).
- **Commercial Service Airports** are publicly owned airports that have at least 2,500 passenger boardings each calendar year and receive scheduled passenger service. Passenger boardings refer to revenue passenger boardings on an aircraft in service in air commerce, whether or not in scheduled service.

1.3.3 Airport Facilities

Airport facilities are generally categorized as airside facilities, landside facilities, and airspace control areas. The facilities function and interact to ensure efficient and safe operations at the Airport. These facilities are further discussed below.

1.3.3.1 Airside Facilities

Airside facilities include Airport areas where aircraft movements take place between the air and ground. Typically, airside facilities include runways, taxiways, airport lighting and markings, and navigational aids. **Figure 1.1-2** depicts all airside facilities located at the Airport.

1.3.3.1.1 Runways

The Airport has two runways; Runway 15-33 and Runway 6-24. **Table 1.3-2** lists existing runways and their respective lengths and widths. Both runways have instrument approach aids and precision approach markings for Runway 15 and Runway 24 approaches, respectively. Detailed usage data for each runway is provided in Section 5.9.

Table 1.3-2 Existing Airport Runways

Runway	Function	Length (ft)	Width (ft)
RWY 15-33	Primary Instrument Flight Rules (IFR) runway	5,255	150
RWY 6-24	Primary Visual Flight Rule (VFR) runway	5,425	150

The conditions under which a runway will be utilized are based on a number of factors, including wind conditions. Aircraft generally will take off and land in the direction of the wind and the pilot will select the runway accordingly. However, runway characteristics including length and width, and weather conditions, will also influence a pilot's selection of a runway. Winds predominantly favor Runway 15-33 for approximately 75 percent of operations during the winter months, while winds favor Runway 6-24 for approximately 75 percent of operations during the summer months.

All runways have declared distances[1] which provide details regarding runway length usage for takeoff and landings due to current airport conditions.

Table 1.3-3 Declared Distances

Runway	6/24 (feet)	15/33 (feet)
Takeoff Run Available (TORA)	5,425 / 5,425	5,255 / 5,255
Takeoff Distance Available (TODA)	5,425 / 5,425	5,255 / 5,255
Accelerate-stop Distance Available (ASDA)	5,425 / 5,425	5,255 / 5,255
Landing Distance Available (LDA)	5,019 / 5,425	5,255 / 5,105

Source: FAA Form 5010-1, effective 2/27/2020 (viewed 3/23/2020), McFarland-Johnson 2022.

1.3.3.1.1.1 Runway 15-33

Runway 15-33 serves as the current primary instrument flight rules (IFR) runway. It measures 5,255 feet long by 150 feet wide and is generally aligned in a northwest to southeast direction. The runway is constructed of grooved asphalt and has high intensity runway edge lights (HIRL). Runway 15 is equipped with a 2,400-foot medium intensity approach lighting system with runway alignment indicator lights (MALSR). Runway 33 is equipped with 4-box precision approach path indicator (PAPI)

[1] Defined per FAA AC 150/5300-13B as "maximum distances available and suitable for meeting takeoff, rejected takeoff, and landing distances performance requirements for turbine powered aircraft."

with a standard 3-degree glide path. Runway 15-33 can accommodate all weight Class A and B aircraft and up to 75 percent of weight Class C aircraft in dry conditions. In wet conditions, this reduces to approximately 12 percent of weight Class C aircraft.

1.3.3.1.1.2 Runway 6-24

Runway 6-24 serves as the current primary visual flight rule (VFR) runway; however, ILS is also present. It measures 5,425 feet long by 150 feet wide. It is generally aligned in a southwest to northeast direction. The runway is constructed of grooved asphalt and has HIRL. Runway 24 is equipped with a 1,400-foot medium intensity approach lighting system with sequenced flashers (MALSF). The runway is equipped with 4-box PAPI on both runway ends, and both have a standard 3-degree glide path. Runway 6-24 has precision instrument markings in good condition. An EMAS bed is located at the approach end of Runway 6. Similar to Runway 15-33, Runway 6-24 can accommodate all weight Class A and B aircraft and up to 75 percent of weight Class C aircraft in dry conditions. In wet conditions, it can accommodate approximately 12 percent of weight Class C aircraft.

1.3.3.1.2 Taxiways

The Airport has seven taxiways designated A, A1, B, C, C1, D, and E. **Table 1.3-4** lists existing taxiways and their respective lengths and widths. All the taxiways are of asphalt construction and are equipped with LED medium intensity taxiway lights (MITL) except for a portion of Taxiway B between Taxiway D and the hold position for Runway 24 lit with incandescent edge lights. The exception is Taxiway E, which is unlit. Reflective markers mark the pavement edge of the run-up area near Runway 24 on Taxiways B and the no-taxi island on the East Ramp beyond the intersection of Taxiways B and D. The taxiway system at the Airport, as illustrated on **Figure 1.1-2**, consists of parallel, connecting, access, and entrance/exit taxiways.

Table 1.3-4 Existing Taxiways

Pavement	Length (ft)	Width (ft)
TWY A	5,800	50
TWY A1	400	65
TWY B	3,750	40
TWY C	5,800	50
TWY C1	400	55
TWY D	3,600	65
TWY E	990	50

The existing taxiways include:

- Taxiway A serves as a full-length parallel taxiway to Runway 15-33 adjacent to the Terminal Ramp;
- Taxiway A1 is a stub taxiway that connects Runway 15-33 to Taxiway A approximately 1,120 feet from the Runway 15 threshold;
- Taxiway B serves as a partial parallel taxiway to Runway 6-24 adjacent to the East Apron. It connects with Taxiway A near the threshold of Runway 33 and terminates at the intersection of Runway 6-24;

- Taxiway C serves as a full-length parallel taxiway to Runway 6-24. Taxiway C crosses Runway 15-33 approximately 1,200 feet from the Runway 33 threshold;
- Taxiway C1 located on the north side of Runway 6-24, is a stub taxiway that connects Taxiway C to Runway 6-24;
- Taxiway D, which measures approximately 65 feet wide at the hold bar west of Runway 15-33, 75 feet wide at the hold bar north of Runway 6-24, and 50 feet wide everywhere else. The majority of Taxiway D intersects both Runways 15-33 and 6-24 at an acute angle. Taxiway D extends from the North ramp, across Taxiway A and Runway 15-33 to Taxiway B, east of Runway 6-24; and
- Taxiway E connects to Runway 15-33 to a run-up pit located north of Runway 15-33.

1.3.3.1.3 Ramps

The Airport has three ramps; the Terminal Ramp, the East Ramp, and the North Ramp, that provide approximately 369,500 sf of based aircraft parking, itinerant aircraft parking (transient aircraft parking), aircraft fueling ramp, and staging and maneuvering areas. These ramps are defined as areas intended for use by aircraft for loading and unloading passengers and cargo, parking, refueling, or maintenance.

- The Terminal Ramp is located adjacent to the terminal on the west side of Runway 15-33 and spans approximately 24,000 square yards (SY). The Terminal Ramp is used for passengers boarding and deboarding aircraft. The northern section of the Terminal Ramp was rehabilitated in 2013. Other portions of the Terminal Ramp were rehabilitated in 2015 and a deicing pad and aircraft wash rack area were installed as environmental protection enhancements.
- The East Ramp is located east of Runway 6-24 and spans approximately 45,600 SY. The majority of hangars that provide storage for single engine aircraft are found on the East Ramp. There are 55 tie-downs on the East Ramp, with 18 located in front of the 110 Mary Dunn Way hangar and 37 in front of the Hyannis Hangar LLC T-hangars and the Hexagon hangar.
- The North Ramp is connected to the Terminal Ramp closest to the Runway 15 end and spans approximately 55,500 SY. The ramp has limited space available for aircraft tie-downs and is the busiest ramp in the summer months.

1.3.3.2 Landside Facilities

Landside facilities support the aircraft and pilot/passenger functions, as well as other non-aviation facilities typically providing a revenue stream to the Airport. These facilities include the terminal building, general aviation facilities, and support facilities, such as fuel storage, vehicle parking, roadway access, and ARFF. The primary landside facilities at the Airport are identified in **Figure 1.3- 1**.

1.3.3.2.1 Hangars

Hangar space at the Airport is provided for both based and itinerant aircraft. There are currently eight conventional hangars, approximately 24,850 sf in total, located on both the East and North Ramps. Six of the eight conventional hangars are located on the North Ramp: Atlantic Aviation, Airport-owned hangar leased by Cape Air/Nantucket Airlines, Griffin Avionics, Airport-own Hangar II

leased by Cape Air/Nantucket Airlines, and Gull Air (Hangars 1 and 2). The other two conventional hangars are located on the East Ramp: 110 Mary Dunn Way Hangar and Cottle Hangar space is sectioned based on type of aircraft:

- 1,200 sf for Single Engine and Rotor Aircraft
- 1,600 sf for Multi-Engine Aircraft
- 3,200 sf for Jet Aircraft

There are currently 33 individual unit hangar buildings located on the East Ramp: Airport owned T-hangar, Aero Management Associates Hangar, Hyannis Hangar LLC, Hexagon Hangar, and Kingsbury (Hangars 1 and 2). There are currently 32 entities on a waitlist for Airport hangars.

Table 1.3-5 Airport Assets - Buildings

Asset	Size	Use
Ross Rectrix Aerodrome Center	35,000 sf	FBO, FAA and Cape Air office Space, and aircraft storage
HYA Fleet Hangar (Leased by Hyannis Air Service aka Cape Air and Nantucket Airlines)	39,500 sf	Aircraft storage, offices, and maintenance (Hyannis Air Service only)
Griffin Avionics	19,000 sf	FBO, aircraft storage, aircraft maintenance and offices
HYA Hangar II (Leased by Cape Air)	12,500 sf	Cape Air office and storage space, Airport SRE storage
Airline Realty Trust (Leased by Allies Aviation)	5,000 sf	Aircraft charters and aircraft storage
Hangar 51 LLC (Leased by Allies Aviation)	10,500 sf	Aircraft charters and aircraft storage
110 Mary Dunn Way Hangar	6,000 sf	FBO and aircraft storage
Cottle Hangar	7,500 sf	Aircraft storage
Airport T-hangar	8,900 sf (6-units)	Aircraft storage, maintenance and SRE storage
Aero Management Association (AMA), Inc	11,450 sf (3-units)	Aircraft maintenance and storage
Hyannis Hangar LLC	7,550 sf (8-units)	Aircraft storage
Hexagon Hangars (Privately Owned)	10,250 sf (6-units)	Aircraft storage
Kingsbury Aviation	10,000 sf (4-units)	Aircraft storage
Kingsbury Aviation	9,700 sf (6-units)	Aircraft storage

1.3.3.2.2 Airport Terminal Building

Constructed in 2011, the approximately 32,000 sf terminal building is located on the southwest side of the Airport property and serves as the point of transition for travelers between surface and air transportation utilizing commercial airlines. The Airport terminal also serves as the airport administration building and a community asset for artists to display their work, the Massachusetts Air and Space Museum to showcase historic aviation artifacts, and as a public gathering space for various community events. The current Airport terminal building was constructed in 2011 and has two floors. The first floor, approximately 26,600 sf, provides secure and non-secure areas for passengers (food and beverage, retail, and service-based concessions). The second floor,

approximately 5,400 sf, is comprised entirely of office space, including Airport and TSA offices, and support and storage space.

1.3.3.2.3 Vehicle Parking

The Airport provides parking in five locations: main terminal lot, rental car parking, employee parking, overflow grass parking lot and a gravel lot leased to the Steamship Authority. The passenger parking lots contain a total of approximately 585 spaces, while the overflow parking lot accommodates approximately 400 parking spaces. Current demand for parking is approximately 313 cars. In addition, approximately 100 car rental spaces are provided.

1.4 Airport Activity (MEPA)

The FAA defines an aircraft operation as a takeoff or a landing and categorizes the operations by aircraft type and purpose. These categories include commercial/air taxi, General Aviation, and military. The forecasting of all these different types of operations, combined with the requirements of the design critical aircraft, is used in the planning and size criteria of terminal buildings, runways, taxiways, and other airport infrastructure. At Cape Cod Gateway Airport, the:

Air taxi and commuter operations are those commercial in nature with less than 60 seats. They include charter operator activities such as Cape Air, Gull Air, and similar type operators.

Air Carrier are all those operations on aircraft with greater than 60 seats.

Commercial operations are all those which are all airline operations at the passenger terminal.

General Aviation (GA) refers to all civil aviation non-commercial operations. This includes recreational, corporate, and medical evacuation operations. **Itinerant** GA refers to flights traveling to/from the Airport. **Local** operations include those operations on Airport-based aircraft.

Aircraft activity at the Airport is tracked via a third-party service which utilizes cameras and radar to identify each individual aircraft that takes off and lands at the Airport since 2015. This information is tracked online and reported annually to the FAA. Prior to 2015, the data was collected via air traffic records.

Table 1.4-1 presents data for historical aircraft operations at the Airport by type. Overall, operations began to decline in 2007 and were accelerated with the departure of air taxi operator Colgan Air in 2010, followed by Island Air in 2015. Collectively, these services conducted 188,000 operations annually; a capacity that could not be served by Cape Air. Additionally, high speed ferry service started serving the islands from Hyannis provided a less expensive alternative.

JetBlue commenced operations at the Airport in 2014 and is forecasted to have 240 operations in 2023 with the same schedule as 2022. Aircraft operations trends also illustrate an increase in general aviation operations from 2021 to 2022.

Table 1.4-1 2008-2023 Historical Aircraft Operations (Calendar Year)

Year	Air Carrier	Air Taxi	GA Itinerant	GA Local	Military	Total Ops
2008	0	118,418	35,603	5,546	292	159,859
2009	12	84,246	20,774	7,070	271	112,373
2010	1	77,929	20,325	5,543	202	104,000
2011	0	69,238	19,783	7,058	201	96,280
2012	0	70,956	23,693	9,167	333	104,149
2013	0	67,798	24,796	9,067	367	102,028
2014	149	64,419	26,513	8,220	222	99,523
2015	159	58,758	24,067	6,733	251	89,968
2016	255	58,001	29,316	9,381	212	97,165
2017	186	47,092	26,521	7,081	136	81,016
2018	183	35,595	22,340	9,009	223	67,350
2019	167	32,483	22,241	10,839	387	66,117
2020	60	25,939	18,021	9,049	330	53,399
2021	84	26,628	18,455	9,177	364	58,361
2022	240	23,254	19,369	10,245	248	53,569
2023	399	20,298	14,640	14,331	456	14

Source : 2023 https://adip.faa.gov/agis/public/#/airportData/HYA

1.4.1 Commercial Passenger Enplanements

Historical data for passenger enplanements is presented in **Table 1.4-2**. This commercial airline data includes both the larger air carriers as well as air taxi operators. Evidently, this shows that the Airport has experienced a decline in passenger growth over the past ten years. The overall decrease in enplanements is likely due to many factors, including competition with other modes of transportation such as the high-speed ferry service, the Great Recession (2008-2009), and the loss of two airlines (Colgan Air and the bankruptcy of Island Airlines). Collectively, those two airlines served over 150,000 passengers per year. Most recently, the COVID pandemic had a dramatic impact on commercial air travel overall and locally evident in the dip in enplanements in 2020. Air travel began to rebound in 2021.

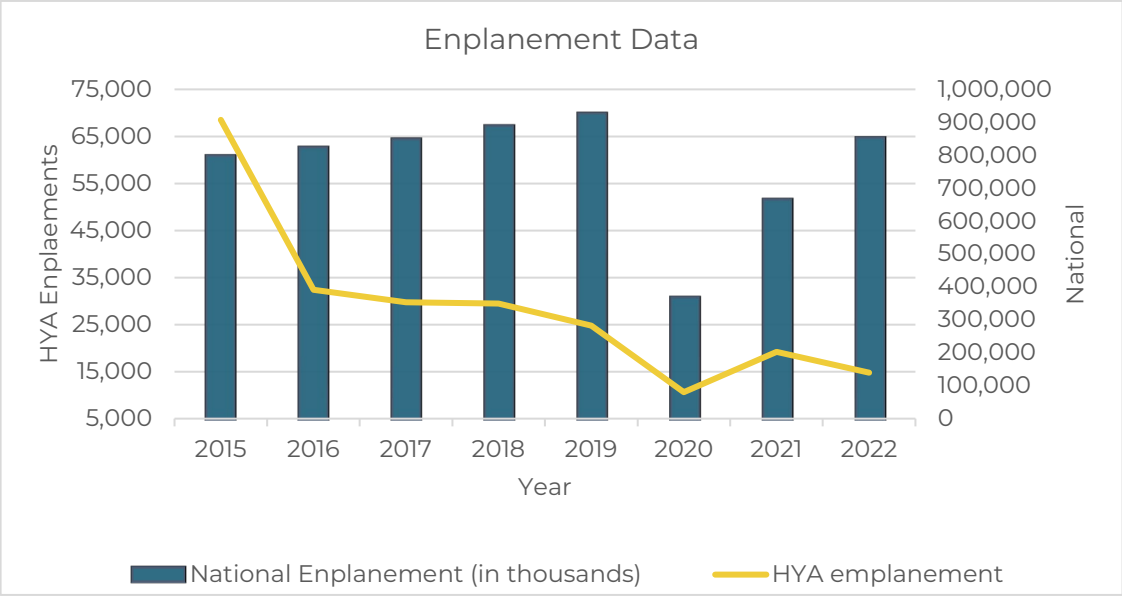
Table 1.4-2 HYA Passenger Enplanements Between 2008 and 2022

Year	Enplanements
2008	191,837
2009	138,451
2010	124,164
2011	100,450
2012	94,466
2013	86,745
2014	84,764
2015	68,519
2016	32,397
2017	29,719
2018	29,457
2019	24,799
2020	10,627
2021	19,175
2022	14,753

NOTE: July 2017 - Began to report revenue only activity

In 2022, total global flight volume was 18% below 2019 levels[2] and this trend is similar at Cape Cod Gateway Airport as reflected in the recovering operational trend discussed above and enplanement data graphed below. Industry-wide, a decline in the use of regional jets and an increase in narrow-bodied jets is trending. This is partially due to pilot shortages as regional airlines typically provide the training required for larger aircraft, an industry-wide factor. Locally, the ferries have played a role in the reduced aircraft operations and passenger volumes to Nantucket and Martha's Vineyard. However, there is a trend of increased private and charter flight operations post-COVID as more users have switched to private charter services. That data is not tracked in the enplanement data identified herein.

Graph 1.4-1 HYA and National Enplanement Data Trends



[2] Oliver Wyman. Airline Economic Analysis 2022-2023. https://www.oliverwyman.com/our-expertise/insights/2023/may/airline-economic-analysis-2022-2023.html

1.4.2 Operational Forecasts

The FAA requires that all airport planning efforts be based upon an approved forecast methodology as the resulting analysis assists in determining the facility requirements for meeting future demand. In the 2022 Master Plan, different operational forecasting methodologies utilizing key metrics were determined to be the most appropriate to use for each type. Operational forecasting is a key component of all airport master plan development. Air carrier and air taxi operations utilized the FAA National Aerospace Forecast methodology. GA jet operations utilized a blended forecast of the New England Region market share and the national growth rate. Light GA operations utilized a forecast that is a blend of the ten-year trend analysis and the National Aerospace forecast. Air carrier and air taxi operations at the Airport are year-round with seasonal activity occurring by JetBlue with flights to/from Hyannis and New York (JFK and LGA). The forecasted growth in air carrier growth at the Airport is 2.1 percent annually. This percentage reflects the national trends associated with the air carrier operations throughout the national airspace system. The National Aerospace Forecast projects a decline of 0.6 percent in air taxi operations segment over the next 20 years due to declines in the use of small regional airplanes and the up gauge in larger jet aircraft (increasing from 50 to 70+ passenger seats) and the increased strain on available pilots for smaller capacity aircraft flying. The latter of those factors has been one of the reasons for decreased frequency on routes to Nantucket and Boston. Flying to the Islands is expected to continue to decline as result of increased high-speed ferry service. Based on these factors, a negative growth rate of 0.6 percent was utilized in the FAA-approved Master Plan forecast analysis for this market segment.

The FAA issues an annual aerospace forecast that is a top-down (national level) forecast for aviation activity in the United States for the next 20 years. The national forecast examines current commercial operations (passenger and cargo) and general aviation, as well as emerging aircraft operations (e.g., commercial space, UAS, and AAM) and projects future activity. The FAA also develops a bottom-up TAF for each individual NPIAS airport. These forecasts are prepared to meet the budget and planning needs of the FAA and to provide information that may be useful for State and local authorities, the aviation industry, and other stakeholders. – FAA

GA operations use forecasts based on the New England Region market share and the national growth rate for itinerant GA as provided by the National Aerospace Forecast. The GA local preferred methodology was the average annual growth rate (AAGR) of the 10-year historic trend and the national growth rate for local GA as provided by the National Aerospace Forecast. **Table 1.4-3** shows current and projected annual operations by operation type.

Table 1.4-3 Annual Operations Forecast by Type

			Itinerant			Local			Total
Year	Air Carrier	Air Taxi	GA	Military	Total	GA	Military	Total	Ops
Baseline	183	35,595	22,340	95	58,213	9,009	128	9,137	67,350
2025	197	32,360	24,639	95	57,291	9,800	128	9,928	67,219
2030	219	31,401	26,514	95	58,229	10,447	128	10,575	68,804
2040	270	29,567	30,956	95	60,888	11,985	128	12,113	73,001

Sources: Cape Cod Gateway Airport Management, 2019; McFarland Johnson, 2019.

However, annual operations numbers, when divided equally over the year and throughout the day, do not exactly identify capacity constraints or facility needs during busier periods. To accurately identify airport requirements for facility planning, peaking characteristics are incorporated into the analysis such as the busiest month (peak month) of the year, what is an average day of the peak month, and peak hour.

Table 1.4-4 Peaking Characteristics

	Baseline	2025	2030	2040
Operations	67,350	67,219	68,804	73,001
Peak month	7,745	7,730	7,912	8,395
Average Day Peak Month	258	249	255	271
Peak Hour	44	42	43	46

Sources: Cape Cod Gateway Airport Management, 2019 and McFarland Johnson, 2019.

In summary, operation forecasts are anticipated to grow 8.3 percent through 2040, while based aircraft will experience a slight decline from baseline-based aircraft of 48 to 44 based aircraft in 2040. In addition to this summary, a detailed forecast analysis and discussion of data from Chapter 5 of the 2022 Master Plan is provided in **Appendix B**.

1.4.2.1 Commercial Passenger Enplanement Forecasts

Passenger enplanements – the number of people boarding commercial aircraft each year - are an important measure for forecasting activity at commercial service airports. The enplanements forecast focuses on the total annual enplanements as well as the peak hour characteristics of busier traffic periods (see **Table 1.4-5**). These forecasts are used in the assessment of the passenger terminal building and associated facilities such as auto parking lots. Additionally, beyond the terminal area, impacts on roadways and transportation networks may result from future demand.

Table 1.4-5 Forecasted Commercial Passenger Enplanements

Year	Master Plan Forecast
2020	26,104
2025	27,121
2030	28,193
2040	30,484

1.5 Environmental Review and Permitting

The Projects are subject to the following, federal, state, and regional environmental review processes.

1.5.1 Massachusetts Environmental Policy Act (MEPA)

MEPA (301 CMR 11.00) has jurisdiction over projects that meet certain thresholds and require state permits or receive state funding. The Airport's 2022 Master Plan Update includes projects which, individually or together, will meet certain established thresholds under MEPA regulations. MEPA

regulation 301 CMR 11.01(2)(c) does not allow related projects to be "segmented" or considered individually. Therefore, the various project impacts are considered collectively in determining MEPA jurisdiction.

Thresholds under 301 CMR 11.03 anticipated to be met or exceeded based on the selected preferred alternatives reviewed as a result of the EA/EIR review process include:

- 11.03(1)a(1) Alteration of greater than 50 acres of land
- 11.03(1)a(2) Creation of ten or more acres of impervious area.
- 11.03(6)b(iii) Expansion of an existing runway at an airport
- 11.03(6)b(iv) Construction of a New taxiway at an airport
- 11.03(6)(b)(1)f) Alteration of one-half or more acres of other wetlands (LUW)

In accordance with MEPA requirements, the Airport prepared and submitted an ENF on November 30, 2022 for the Projects. The Secretary's Certificate (EEA# 16640) on the ENF was received on January 23, 2023, requiring the preparation of an EIR. The MEPA Certificate on the ENF is provided in **Appendix A.**

1.5.1.1 Changes to the Project since the Submittal of the ENF

Since the submittal of the ENF on November 30, 2022, the Proponent has continued to refine the projects proposed through conceptual design, additional need analysis, and input from the community. This has resulted in additional alternatives evaluated for the Project, including refined runway alternatives, options for an operational shift to Joint Base Cape Cod (JBCC), taxiway configurations, and airport terminal needs. As a result of this feedback, the Airport has shortened the proposed runway extension by 400 feet to address community concerns regarding noise and safety, among other modifications. Additionally, the Airport has continued to engage neighbors to provide updates on environmental practices related to ongoing remediation efforts on Airport related to PFAS.

Ultimately, modification of the ENF-identified Preferred Alternative for the runway extension of Runway 15-33 to a 440 foot shorter extension and only on the 15-end was selected. The modified Preferred Alternative of an 895-foot extension is presented in Chapter 4.0 along with an updated alternatives analysis. No additional runway length is proposed to be added to the existing Runway 33-end. Additionally, an updated noise analysis has been completed per FAA's required methodology, evaluating the updated preferred runway extension length. This data is presented in Section 6.6.

There have been minor changes to the phasing of these projects, as annual Capital Improvement Plan (CIP) budgets are implemented at the state and federal level based on funding availability. These updates are shown in the construction phasing discussion in Chapter 3.0. Projects that have been determined to commence later than 2029 (including design phases) have been removed from the analysis provided herein. That includes any terminal modifications or expansion as well as the Runway 6 RSA enhancements. This analysis has been moved to **Appendix C** for information purposes only.

Conceptual grading plans have progressed for the runway and taxiway projects, determining the limits of work, areas of new land disturbance, wetland impacts, and required safety area tree removal on Airport. An updated obstruction analysis for easement acquisition has also been completed and the easements are further discussed in Section 3.3.

Table 1.5-1 Summary of ENF vs DEIR Impacts

	Existing	Change ENF	DEIR Update
Total Site Acreage (in acres)	639	0	0
New acres of altered land (in acres)	--	63	50*
Acres of Impervious Area (in acres)	167	27	40
Square feet of new bordering vegetated wetlands alteration (in sf)		3,427	4,600
Square feet of new other wetland alteration		+/-23,000	12,700 sf LUW 300 lf Bank
Footprint of buildings (in acres)	121	0.25	0.25**
Gross square footage	43,097	55,000	55,000
Internal roadways (in acres)	902	21	14***
Parking and other paved areas (in acres)	50	--	26.4
Vehicle trips per day	88	88	70 - 171****
Parking spaces	1,135	0	0
Other altered areas (in acres)	27	--	--
Undeveloped areas (in acres)	460	-21	-40
Water Use (Gallons per day [GPD])	7,0004	--	--
Water withdrawal (GPD)	7,000	--	--
Wastewater generation/treatment (GPD)	13,000	--	--

* Overall footprint of the Proposed Action includes vegetation converted to impervious surface and impacts of grading.

** This number does not include potential hangars which may be up to a total of 5 acres. These 5 acres overlap with the impervious surface number under "other paved areas."

*** Paved apron and ramp space is now included in" other paved surfaces."

**** 100% growth scenario (increase in 200 peak hour passenger design capacity). Increased trips represent between a 0.51% and 1.30% increase in daily and peak hour volumes, respectively, along the major travel routes.

1.5.2 National Environmental Policy Act (NEPA)

NEPA (40 Code of Federal Regulations [CFR] 1500-1508 and 23 CFR 771) requires federal agencies to determine whether there are significant impacts associated with federal actions, including federally funded projects.

The Airport's Master Plan Update identifies and recommends several projects that are eligible for federal funding and as a result, subject to NEPA. Per NEPA and FAA Implementing Instructions for airport projects under its authority in FAA Order 5050.4B, an EA must be prepared. Similar to the MEPA process, the EA process includes opportunities for public comment. After environmental impacts and mitigation measures are assessed, the FAA determines the significance of impacts. If significant, an Environmental Impact Statement (EIS) will be required, if not significant, the FAA will issue a Finding of No Significant Impact (FONSI).

1.5.3 Permit and Approval Requirements

The Projects are anticipated to require the following permits and approvals from local, state, and federal agencies listed in **Table 1.5-2.**

Table 1.5-2 Permits and Approvals Required for the Project

Permit/Review	Agency	Status and Relevant Project(s)	Measures to Comply with Applicable Performance Standards
Federal			
National Environmental Policy Act (NEPA)	Federal Aviation Administration (FAA)	Draft EA to be filed November 2023	An Environmental Assessment (EA) and associated Finding of No Significant Impact (FONSI) will be prepared in accordance with FAA Order 1050.1F.
Section 404 General Permit (Pre-Construction Notification)	Army Corps of Engineers (Corps)	PCN to be filed (Date TBD) for Taxiway D only	Selection of the least environmentally damaging practicable alternative including measures designed to avoid, minimize, and mitigate impacts to wetlands and other waters of the U.S.
Coverage under National Pollutant Discharge Elimination System (NPDES) Construction Activities Permit	Environmental Protection Agency	Notice of Intent (NOI) to be filed one to two months prior to start of construction of all Projects over 1 acre of impact.	Stormwater Pollution Prevention Plan to be developed and implemented, involving series of construction BMPs to reduce potential for erosion and sedimentation.
FAA planning, design, and safety Standards: AC 150/5300-13B Airport Design	Federal Aviation Administration (FAA)	Conceptual design complete. Final construction design to be completed in permitting phase.	Taxiways / runways will be designed to comply with FAA requirements.
Table 1-Section 7 Consultation under U.S. Endangered Species Act	Department of Interior, U.S. Fish and Wildlife Service (USFWS)	FAA lead agency to consult with USFWS when EA is filed	The Project will be reviewed by the USFWS through the Section 404 permitting process with the Corps as well as NEPA.
Review under Section 106 of the National Historic Preservation Act (36 CFR 800)	FAA, U.S. Army Corps of Engineers; Tribal Consultation; State Historic Preservation Officer (SHPO)	FAA lead agency to consult with SHPO when EA is filed	The Project will be designed to avoid or minimize impacts to historic resources. Consultation will be led by FAA and a determination of "no effect" is anticipated to be made by the MA SHPO based on based on consultation letter.
State			
Individual 401 Water Quality Certificate	Department of Environmental Protection (MassDEP)	WQC to be filed Date TBD for Taxiway D	Similar BMPs are to be employed as required by NPDES and the Corps and under the Massachusetts Wetlands Protection Act. Avoid, minimize, and mitigate impacts to wetlands and waterbodies.
Wetlands Protection Act M.G.L. c. 131 § 40	MassDEP	Notice of Intent To be filed Date TBD for Taxiway D	Avoid, minimize, and mitigate impacts to wetlands and other waterbodies including a minimum of 1:1 replication for unavoidable fill placed in BVW
M.G.L. c. 90 § 35B, 780 CMR 111.7	Massachusetts Department of Transportation (MassDOT) – Aeronautics Division	Conceptual design complete. Final construction design to be completed in permitting phase.	Taxiway / runway surfaces will be designed to comply with MassDOT requirements.

Table 1.5-2 Permits and Approvals Required for the Project (Continued)

Permit/Review	Agency	Status and Relevant Project(s)	Measures to Comply with Applicable Performance Standards
State			
Review under Massachusetts Endangered Species Act	Natural Heritage and Endangered Species Program	No impacts anticipated. MESA Checklist filed TBD if necessary.	Avoid and minimize impacts to state listed species habitats.
State Historic Register Review (Chapter 256)	Massachusetts Historical Commission (MHC)	FAA to consult with MHC upon submittal of the EA.	The Project will be designed to avoid or minimize impacts to historic resources. Consultation will be led by FAA and a determination of "no effect" is anticipated to be made by the MA SHPO based on consultation letter.
Regional			
Development of Regional Impact	Cape Cod Commission	DRI application to be submitted upon completion of MEPA.	
Local			
Wetlands Bylaw Order of Conditions	Barnstable Conservation Commission	Notice of Intent to be filed Date TBD For Taxiway D	Avoid, minimize, and mitigate impacts to wetlands and other waterbodies including a minimum of 1:1 replication for fill placed in BVW and compensatory flood storage. Similar BMPs to be employed during construction as required by NPDES, the Corps, and MassDEP to prevent erosion and sedimentation that could result in discharges to wetlands.

Chapter 2.0

Purpose and Need

2.0 PURPOSE AND NEED

The FAA must approve proposed airport layout changes to the Cape Cod Gateway Airport; such an approval constitutes a federal action requiring NEPA review. The purpose and need for a project are key elements of the NEPA review. It explains the reasons for the action and what the project sponsor expects to achieve. Further, it provides the basis for evaluating the effectiveness of the alternatives (*i.e.*, how each alternative achieves the purpose of the project by addressing the documented needs).

The need for each Project discussed below addresses the Airport's operational and safety needs while minimizing environmental and community impacts and responding to community questions and comments. Airports receiving federal funding are obligated by grant conditions to comply with FAA planning and airfield design standards that are detailed in multiple FAA advisory circulars, orders, and other regulations. At the most basic level, these requirements are rooted in maximizing safety and efficiency for those in the air and those on the ground.

FAA's AC 150/5300-13B (revised 2022) contains the FAA standards and recommendations for the geometric layout and engineering design of runways, taxiways, aprons, and other facilities at civil airports. These airport design standards represent a concerted effort by the FAA to establish new taxiway design standards to improve overall airport operational safety by requiring airfield taxiway geometries be upgraded to meet the new standards. FAA AC 150/5325-4B Runway Length Requirements for Airport Design provides design standards and guidelines for determining appropriate runway lengths based on the critical design aircraft. The current runway lengths do not meet these criteria for the current design aircraft. The proposed runway extension is needed to meet the recommended runway length based on the operational needs and efficiency of the design aircraft. The proposed Projects are part of the overall FAA effort to improve airfield operational safety by modifying current taxiway geometries to conform with new or revised design standards and Airport operational needs. Often the need for geometric modifications is the result of the design of older airfields and the geometries that existed in the 1920s and 1940s when they were first constructed; as is the case with Cape Cod Gateway Airport. The current non-standard airfield geometries and design at the Airport are identified where applicable and summarized in **Table 2.2- 5.**

Information is provided to demonstrate a balanced approach to achieving the purpose and need for the proposed Projects, along with data analysis, to address and respond to community feedback received at public meetings and during formal comment periods. The individual Projects are described further in Chapter 3.0. The evaluation of the alternatives and selection of alternatives to meet the purpose and need is described in Chapter 4.0.

2.1 Purpose

The proposed Projects from the 2022 Master Plan for the Cape Cod Gateway Airport have the following purposes:

- To improve airfield safety and compliance with FAA airport design standards by eliminating nonstandard taxiway designs and geometries including direct taxiway connections from apron areas to runways and non-standard taxiway intersections;
- To provide a reasonable and balanced approach in meeting runway length recommendations for safety and operational efficiency as identified in the Master Plan for the current and future families of aircraft using the Airport including general aviation, air carrier, air taxi, military, and private and corporate aircraft;
- To enhance and maintain safe and efficient landside facilities that are compliant with FAA airport design standards and MassDOT Aeronautics Division regulations; and
- To develop opportunities to promote financial self-sufficiency and energy sustainability at Cape Cod Gateway Airport and economic growth for the community.

2.2 Need

As described in more detail below, the proposed Projects are needed to enhance overall operational safety and efficiency at the Cape Cod Gateway Airport. The Projects are based on the need to reasonably accommodate existing and anticipated aviation demand for the current families of aircraft, FAA and MassDOT safety and security requirements, and Airport financial self-sufficiency. The Airport operates as an enterprise fund and is financially self-sufficient from the town in meeting its operating obligations and future infrastructure needs. References to FAA airport design standards, unless otherwise noted, refer to FAA Advisory Circular (AC) 150/5300-13B, *Airport Design*. Descriptions of the need for the individual Projects are provided below. All proposed Projects are shown in **Figure 1.1-3**.

2.2.1 Airside Facilities

2.2.1.1 Construct Partial Parallel Taxiway D to Runway 15-33

Currently, the existing Taxiway D ranges in width from 50 to 75 feet wide and begins at the North Ramp apron area and crosses both Taxiway A and Runway 15-33 to existing Taxiway B east of Runway 6-24. It intersects both runways at an acute angle, a non-standard geometry per FAA AC 150/5300-13B, *Airport Design*. A non-right-angle taxiway approaching a runway can lead the taxiing aircraft to inadvertently enter the runway. In addition, the non-right-angle connection reduces the ability to see runway ends which may contribute to the loss of situational awareness. This is similar to if your car was parked at an intersection, and you had the inability to clearly see cars coming from either direction. The geometry of Taxiway D also currently provides direct access from the ramp to the runway, a nonstandard condition that can lead to a runway incursion[1].

This Proposed Action involves construction of a new partial parallel taxiway east of Runway 15-33 with a standard 400-foot runway centerline to taxiway centerline separation. It will extend from the existing Taxiway A1 across existing Taxiway D and Runway 6-24 to the proposed relocated Taxiway B (see Section 2.2.1.3 below). This taxiway would be approximately 3,200 feet in length, 50 feet wide,

[1] Any occurrence at an airport involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and takeoff of aircraft.

and tie in with the existing/remaining taxiway. Ultimately, this new partial parallel taxiway will be named Taxiway D. This Project also includes the removal of the portion of existing Taxiway D between existing Taxiway A across Runway 15-33 and up to the proposed new partial parallel taxiway. See **Figure 2.2-1**.

The proposed new partial parallel taxiway (future Taxiway D) would eliminate direct access from the North Ramp to Runway 15-33, the acute angle access points to Runway 15-33, as well as the high-energy crossing location. The future Taxiway D would also prevent existing operational concerns due to two-way taxiing occurring directly in front of the terminal building.

2.2.1.2 Remove Taxiway E and Existing Runup Area/Construct an Engine Run-up Area for Partial Parallel Taxiway D

The existing Taxiway E measures 50 feet wide and connects Runway 15-33 to an approximately ±42,000 square foot (sf) engine run-up area, which currently does not have a sound barrier. The existing engine run-up area is currently used by aircraft for pre-flight testing and maintenance operations and is used to buffer the noise for those types of operations. The current geometry of Taxiway E is non-standard per FAA AC 150/5300-13B, *Airport Design*.

This proposed Project will eliminate existing non-right-angle geometry to Runway 15-33 by removing the existing Taxiway E and the associated aircraft engine runup area (pit). Removal of the existing run-up area will require the construction of a new run-up area, immediately adjacent to the existing run-up area, designed to accommodate the existing aircraft fleet. The new run-up area, proposed for construction on the future Taxiway D, will be used for the same purposes.

A noise barrier is proposed to be constructed adjacent to the run-up area to provide additional noise mitigation for the surrounding areas. See **Figure 2.2-1**.

In conformance with the FAA's goals to correct nonstandard airfield geometries, enhance aircraft safety, and ensure compliance with regulatory guidance, this Project serves to correct deficiencies associated with existing Taxiway D (circa 1998) and Taxiway E (circa 1980) that will ultimately improve safety and operational efficiency.

2.2.1.3 Relocate and Reconstruct Taxiway B

Adjacent to the East Apron, the existing Taxiway B is 40 feet wide and serves as a partial parallel taxiway to Runway 6-24. It connects with Taxiway A near the threshold of Runway 33 and terminates south of the Runway 24 approach end. It is also the oldest piece of pavement on the airfield and needs replacement due to failing conditions. Taxiway B's dual use pavement, high energy intersection, and intersection departure due to its physical connection with the East Apron make it a nonstandard geometry taxiway per FAA AC 150/5300-13B, Airport Design. Other deficiencies include its narrow width and pavement condition.

G:\Projects2\MA\Barnstable\6116\MXD\2.2-1_TaxiwayD_2-1_Slope_20231101.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Impact to Bordering Vegetated Wetland
0.1 acres total
0.01 acres pavement

Impact to Open Water
0.29 acres total
0.0 acres pavement

Impact to 100-ft Buffer Zone
1.85 acres total
0.52 acres pavement

Impact to 200-ft Buffer Zone
1.93 acres total
0.62 acres pavement

AIRPORT ROAD

Upper Gate Pond

Proposed Runup Pad

Taxiway E

Existing Taxiway D

Proposed Taxiway D

Runway 15-33

Terminal Ramp

LEGEND

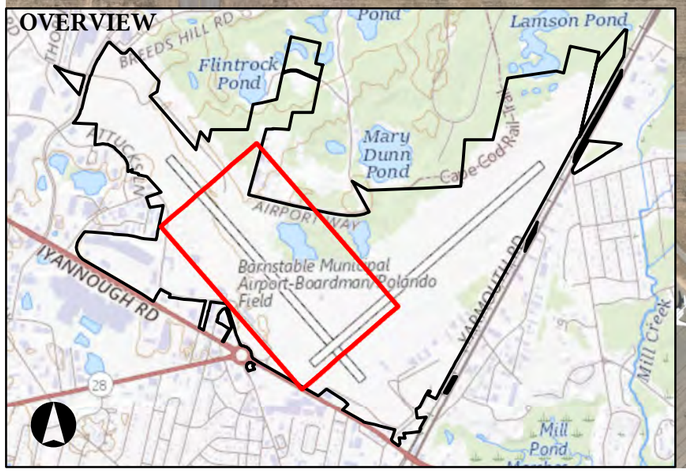
- Airport Property Boundary
- New Pavement
- Pavement to be Reconstructed
- Pavement to be Removed
- Pavement Removal Turf
- Limits of Grading (2:1 Slope)
- Noise Barrier
- Bordering Vegetated Wetland
- Land Under Water
- Bank
- 100-ft Buffer Zone
- 200-ft Buffer Zone

Scale 1:2,880
1 inch = 240 feet

0 120 240 Feet

Basemap: Nearmap Aerial Image, April 2023

OVERVIEW



Cape Cod Gateway Airport Barnstable, Massachusetts

Figure 2.2-1
Proposed Partial Parallel Taxiway D

This proposed Project involves widening Taxiway B to a design standard 50 feet to meet FAA design requirements for the families of aircraft that use the Airport and relocation to an FAA design standard 400-foot runway centerline to taxiway centerline separation south of Runway 6-24; this would separate the taxiway from the East Apron and remove a direct connection from the apron to the taxiway. This new configuration would not only separate the taxiway pavement from the apron

pavement, but it would also extend Taxiway B northward to just south of the existing glide slope antenna and allow for additional room for apron expansion. The new taxiway configuration/length would provide for aircraft to taxi closer to the runway ends and reduce/eliminate the need for "back-taxiing" operations and enables runway crossings to occur at runway ends, the safest location to cross a runway. The associated taxiway object free area (TOFA) would remain clear of the glide slope used for navigational purposes. See **Figure 2.2-2**.

The Project would enhance safety by removing dual purpose pavements (i.e., combined apron and taxiway), lengthening the taxi distance, and relocating the taxiway crossing of Runway 6-24 to a lower energy location. A short distance between the apron and the runway requires flight crews to complete the same number of checklist items in a shorter timeframe and requires more heads-down time during taxi.

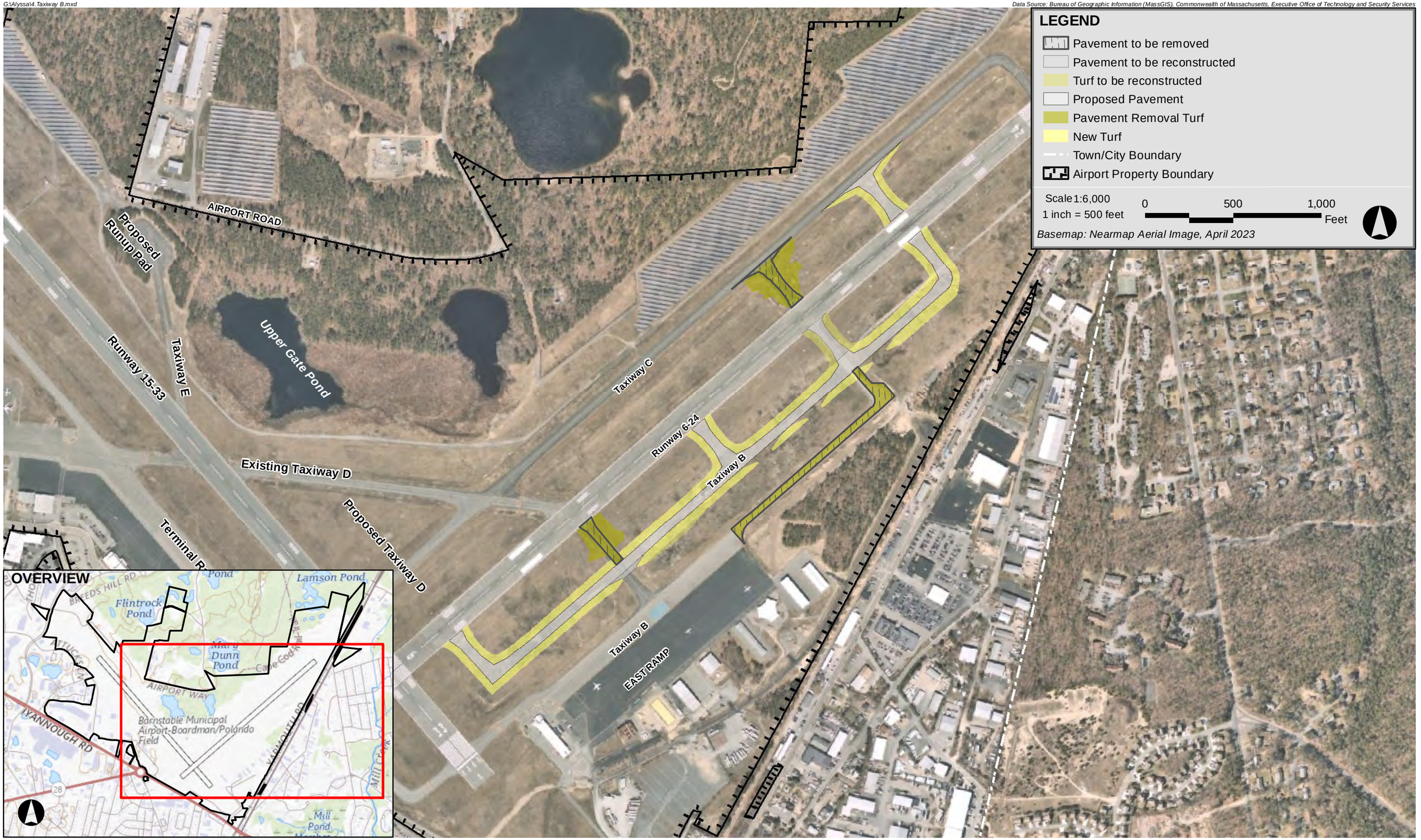
2.2.1.4 Extend Runway 15-33

This proposed Project will extend Runway 15-33 from 5,255 feet to a total length of 6,150 feet (see **Figure 2.2-3**). This length is based on the 2022 Airport Master Plan analysis conducted for the Airport's current family of aircraft using the Airport facility and those projected to use the Airport with typical stage lengths (i.e., distances of travel to/from the Cape Cod Gateway Airport). The length analysis is also based on additional screening that has taken place during the environmental review process, including input from surrounding communities. This analysis eliminates the 33-end extension, reducing the runway length recommendation identified in the Master Plan Preferred Alternative by approximately 400 feet. The Airport Master Plan Facility Requirements, which identified the recommended length of 6,550 feet based on FAA design formulas, has been included in **Appendix B** of this Draft EIR/EA.

Currently, Runway 6-24 (5,425 feet long by 150 feet wide) serves as the primary visual flight rule (VFR) or "good weather" runway, while Runway 15-33 (5,255 feet long by 150 feet wide) serves as the current primary instrument flight rules (IFR) or "bad weather" runway. Extension of Runway 6-24 was eliminated from further study during the Master planning process due to the anticipated community impacts. The extension of the runway ends is constrained by the need to relocate Yarmouth Road, railroad tracks, existing EMAS, Iyannough Road Rotary, and residential property acquisition. See further discussion in Section 4.1.1.7.

G:\Alyssa\4.Taxiway B.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

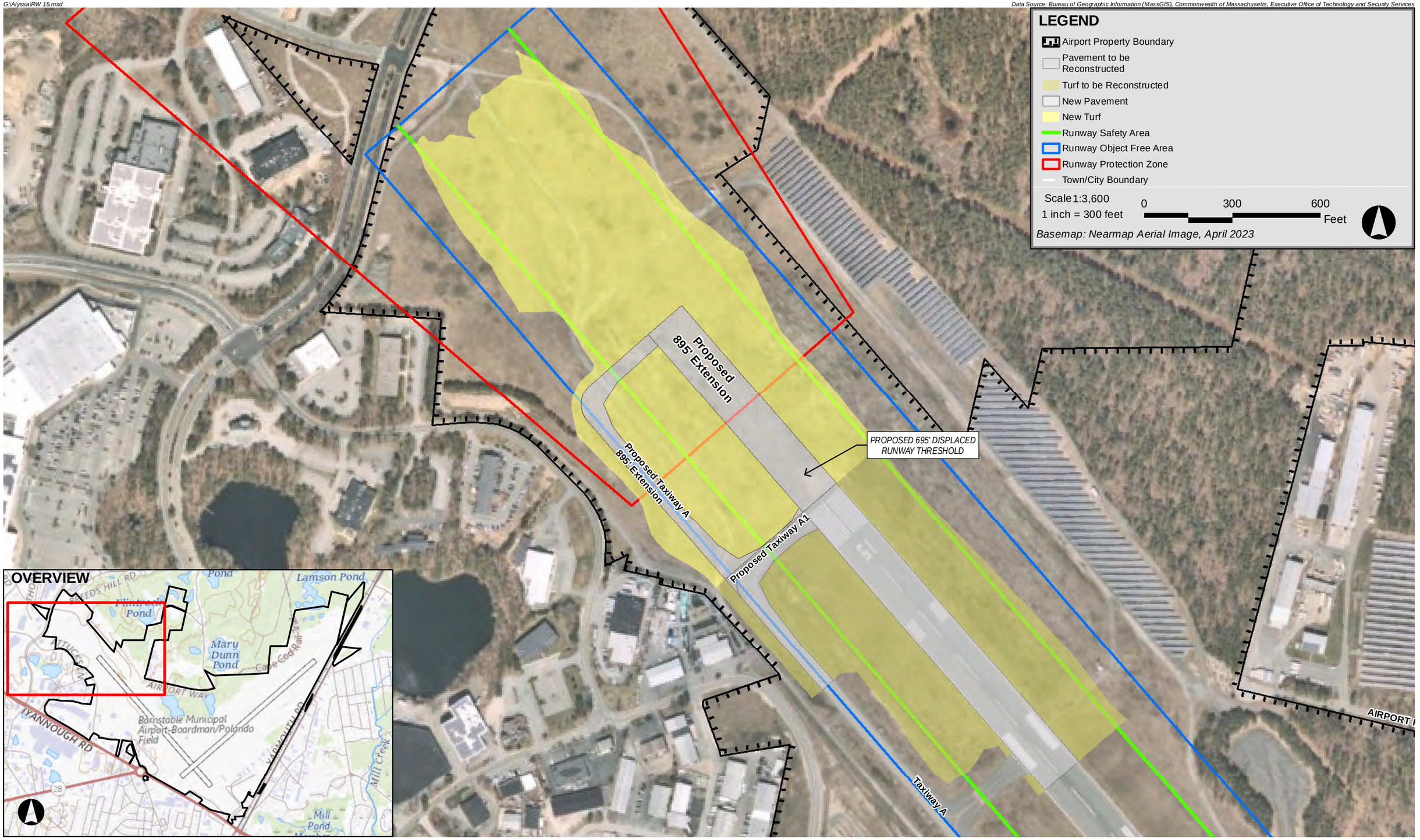


Cape Cod Gateway Airport Barnstable, Massachusetts

Figure 2.2-2
Proposed Taxiway B Relocation

G:\Alyssa\RW 15.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Cape Cod Gateway Airport Barnstable, Massachusetts

Figure 2.2-3
Proposed Runway 15 Extension

Background

During normal operating procedures, the pilot of an aircraft must determine the runway takeoff distance required to fly to a specific destination based on current weather conditions (temperature, humidity, prevailing wind direction, and speed), mission requirements (destination/fuel load, passenger load, and cargo load), specific airport conditions (airport elevation, runway condition, obstructions, etc.), among other factors. Once that runway takeoff distance determination is made, the pilot will compare the existing runway length available with the requirement for that specific mission. If that existing runway length is deficient, the pilot will be forced to reduce the overall weight of the aircraft to lower the takeoff distance required to match the airport's existing runway length. This is done by reducing the amount of fuel (shortening flight distance) and/or payload (passengers or cargo) that the aircraft can take on that flight; this is also known as a weight penalty.

While this is the standard operating procedure for aircraft operators to adjust accordingly to ensure safe operations, it is also generally a goal of airports to optimize aircraft functional safety by reasonably and practicably providing appropriate runway length to accommodate the needs of the majority of their operators.

The planning challenge for airports is to strike an appropriate balance in providing runway length that will meet the requirements of the forecasted critical design aircraft while taking into consideration airport constraints and the surrounding community.

Airports receiving federal funding in the form of grants are required to comply with a wide variety of grant assurances which include the requirement to comply with FAA planning and design standards that are detailed in multiple FAA advisory circulars, orders, and other regulations. At the most basic level, these regulations are rooted in maximizing safety for those in the air and those on the ground. In general, airport infrastructure, including runway length, is designed to accommodate the most demanding aircraft type that will utilize the infrastructure on a regular basis. The FAA refers to this aircraft as the critical design aircraft, which it defines as "*the most demanding aircraft type, or grouping of aircraft [families of aircraft] with similar characteristics, that make regular use of the airport. Regular use is 500 annual operations, including both itinerant and local operations but excluding touch-and-go operations.*"[2] The primary purpose of identifying the critical aircraft is to ultimately translate the operational requirements of that aircraft into the design for airport facilities and infrastructure.

The FAA has developed a system to connect the physical characteristics of the critical aircraft to airport planning and design standards. This system detailed in FAA AC 150/5300-13B Airport Design includes the following codes used to develop the Runway Design Code (RDC).

- The first code, designated with a letter, is the Aircraft Approach Category (AAC) which is based on the approach speed (landing speed) of an aircraft.

[2] FAA AC No: 150/5000-17, Critical Aircraft and Regular Use Determination, (June 20, 2017)

- The second code, the Airplane Design Group (ADG), is determined by the wingspan and tail height of an aircraft and is represented by a Roman numeral.

Every aircraft, runway, and the airport as a whole is assigned a reference code. The RDC of a runway and airport is based on the aircraft or combination of aircraft with the highest approach speed and greatest wingspan that either use or are expected to make regular use of the airport. **Figure 2.2-4** lists the AACs/RDCs and illustrates example aircraft for each.

As documented in the 2022 Master Plan, the current and future critical design aircraft for Cape Cod Gateway Airport was established by conducting an aircraft operations analysis. As shown in **Table 2.2-1**, aircraft operations data from the FAA's Traffic Flow Management System Counts (TFMSC) database was used to evaluate historical operations at Cape Cod Gateway Airport to help identify the appropriate critical design aircraft. The TFMSC operations data for this report has been updated to include data through 2022 to confirm the validity of the Master Plan analysis, which was based on 2019 operational data.

It is important to recognize that TFMSC data represents actual flights recorded and validated by the FAA through means of flight plans, instrument flight operations, and/or other radar-based tracking applications. It is the most accurate FAA flight data currently publicly available and identifies aircraft type, flight dates, flight origins and destinations, etc. It must also be recognized that TFMSC data represents a subset of the total number of operations experienced at an airport; thus, there are many operations that occur at an airport that are not recorded in TFMSC.

Specific to the Airport, the total number of civilian operations that occurred in 2022 was 53,946[3], whereas TFMSC recorded details for only 15,681 of those operations or 29.1 percent of the overall total. Most of the operations not captured in the TFMSC can reasonably be assumed to be comprised of smaller general aviation aircraft as their users are typically the least likely to engage in flight recording activities that would register their operations in the TFMSC. Conversely, users of larger aircraft (e.g., multi-engine aircraft, turbine aircraft, business jet aircraft, etc.) tend to regularly utilize those services and therefore their activities are more likely to be captured in the TFMSC. Given this basis of understanding, the fidelity and detail of the TFMSC data provides excellent perspective and insights into the most demanding types of aircraft that regularly operate at an airport.

As documented in the 2022 Master Plan and reflected in **Table 2.2-1**, Cape Cod Gateway Airport's existing and future AAC/ADG is C/D-III. This is established not on the individual categories (i.e., C-III or D-III) meeting the 500 annual operations thresholds, but on a composite approach whereby AAC C and AAC D meet that annual threshold and likewise ADG III now currently meets that 500 operations threshold. This methodology and designation have been reviewed and formally approved by the FAA in May 2022.

[3] Aircraft operations data are collected via ATC tower counts, and by a third-party company (Vector) via airfield cameras that record activity.

Airplane Design Group (ADG) (Wing Span) (Tail Height)	Aircraft Approach Category (AAC) (Approach Speed)			
	Category A (<91 kts)	Category B (91 - <121 kts)	Category C (121 - <141 kts)	Category D (141 - <166 kts)
Group I (<49') / (<20')	**A-I** Cessna 172, Beech Bonanza, Vans RV-6	**B-I** Piper Navajo, Cessna 421, Beech Baron 58	**C-I** Learjet 25, Israel Westwind Astra	**D-I** Learjet 35, F-16C Fighting Falcon
Group II (49' - <79') (20' - <30')	**A-II** Pilatus PC-12, Cessna 208, Aero Commander 500	**B-II** EMB Brasilia, Super King Air 350, Air Tractor 802-A	**C-II** Gulfstream III, Canadair Challenger 600, Citation X	**D-II** Gulfstream G200 and IV
Group III (79' - <118') (30' - <45')	**A-III** Fairchild F-27, Douglas DC-3	**B-III** Boeing B-17, Douglas DC-4, Dash 8	**C-III** Airbus A318, Gulfstream 550, Global 6000, PBY Catalina	**D-III** Boeing 737-800, Douglas DC-9
Group IV (118' - <171') (45' - <60')		**B-IV** Ilyushin Il-76, Boeing C97 Stratocruiser, Douglas DC-7	**C-IV** Boeing 757 and 767, Boeing KC-135	**D-IV** Boeing 767, Douglas DC-10, Douglas MD-11
Group V (171' - <214')(60' - < 66')			**C-V** Boeing 777-200 and 787-8 Dreamliner, Airbus A340-300	**D-V** Boeing 747-400 and 777-300, Airbus A340-500

Figure 2.2-4

FAA Airport Reference Code Designations

Table 2.2-1 Cape Cod Gateway Airport TFMSC Annual Operations by AAC/ADG (2018-2022)

	2018	2019	2020	2021	2022
A-I	2,178	1,962	1,857	2,016	2,094
A-II	445	476	410	670	676
A-III	0	0	0	0	0
B-I	6,348	6,151	6,314	6,998	5,592
B-II	4,684	4,203	3,022	4,464	4,366
B-III	20	29	12	64	72
B-IV	0	0	0	0	0
C-I	596	499	506	710	615
C-II	964	972	982	1,439	1,257
C-III	274	265	134	369	423
C-IV	7	0	1	1	12
D-I	35	28	20	29	13
D-II	310	263	261	404	341
D-III	100	128	72	225	220
D-IV	0	0	0	0	0
Totals:	*15,961*	*14,976*	*13,591*	*17,389*	*15,681*
AAC A	2,623	2,438	2,267	2,686	2,770
AAC B	11,052	10,383	9,348	11,526	10,030
AAC C	1,841	1,736	1,623	2,519	2,307
AAC D	445	419	353	658	574
ADG I	9,157	8,640	8,697	9,753	8,314
ADG II	6,403	5,914	4,675	6,977	6,640
ADG III	394	422	218	658	715
ADG IV	7	-	1	1	12

Source: FAA TFMSC

The AAC/ADG C/D-III designation includes general aviation aircraft such as Gulfstream variants, the Bombardier Global Express, and other large business jets, as well as commercial service aircraft such as the Embraer E190 and the Airbus 220, all of which either currently operate at the Airport or are projected to in the future. Based on the range of the most demanding aircraft that operate at the Airport, two critical design aircraft were identified for Cape Cod Gateway Airport: one representing general aviation activities and one representing commercial service activities. Specifically, the existing general aviation design aircraft and commercial service design aircraft were determined to be the Gulfstream V/G500 and the Embraer E190, respectively. **Table 2.2-2** below provides supporting FAA TFMSC operational data for all those aircraft with an ADG of III that flew into and out of Airport in 2022, including the critical design aircraft.

Table 2.2-2 Total Annual Operations of ADG III Aircraft (2022)

Airplane Approach Category (AAC)	Airplane Design Group (ADG)	Aircraft Type	Total Annual Operations (2022)
B	III	GL7T - Bombardier Global 7500	30
B	III	FA7X - Dassault Falcon F7X	38
C	III	E190 - Embraer E190*	241
C	III	GL5T - Bombardier BD-700 Global 5000	40
C	III	GLEX - Bombardier BD-700 Global Express	142
D	III	GLF5 - Gulfstream V/G500*	165
D	III	GA6C - G-7 Gulfstream G600	22
D	III	GLF6 - Gulfstream	33

Source: FAA TFMSC Database
* Designated as a critical design aircraft for Cape Cod Gateway Airport

Runway Length Recommendations

The purpose of this section is to present a summary of the runway length analysis included in the 2022 Cape Cod Gateway Airport Master Plan. Runway length requirements are based on the greater of the takeoff or landing performance characteristics of the critical design aircraft. Note that the takeoff length requirement nearly always dictates runway length requirements since takeoffs are typically the most demanding operation on a runway.

It should be understood that in practical application, specific runway takeoff length requirements must be generated for each flight that originates at any airport. These requirements are dependent on a wide range of variables (e.g., temperature, humidity, winds, runway condition and gradient, obstructions, aircraft type, length of haul, payload, etc.), many of which can vary dramatically daily or even hourly. However, for airport planning purposes, the FAA endorses applying a generalized methodology for establishing a recommended runway length; this is either computed from FAA composite aircraft fleet operational performance curves (typically used for critical airplanes with maximum takeoff weights (MTOW) between 12,500 pound and 60,000 pounds), or are determined from specific aircraft manufacturer performance data (typically applied for airplanes with a MTOW of greater than 60,000 pounds), or a combination of both.

Since Cape Cod Gateway Airport realizes a significant volume of traffic of aircraft operating in either category (with MTOW below and above 60,000 pounds), both FAA-recommended methodologies were applied. This was done specifically to balance the various needs of the full range of aircraft currently and projected to operate at the Airport over the long term. For those aircraft with a MTOW between 12,500 pounds and 60,000 pounds, the standard FAA methodology was applied to establish a baseline recommended runway length. This approach reflected the steps and requirements dictated in FAA AC 150/5325-4B, Runway Length Requirements for Airport Design, and through application of the FAA Airport Design Software v4.d; the results of this analysis are shown in **Table 2.2-3**.

It should also be recognized that runway length requirements will differ for some aircraft depending on whether the runway is dry or wet/contaminated (i.e., due to rain, snow, or ice)[4] with the latter conditions typically resulting in aircraft requiring additional runway length to operate safely.

Table 2.2-3 FAA Runway Length Recommendation

Input		
Airport Elevation	54' MSL	
Mean Daily Maximum Temp. in Hottest Month	78.0° F	
Maximum Difference in Runway Centerline Elevation	12'	
Estimated Stage Length	1,000 mi	
Runway Lengths Recommended for Airport Design		
	Dry Runway	Wet Runway
Large airplanes of 60,000 pounds or less:		
75 percent of these large airplanes at 60 percent useful load:	4,700'	5,270'
75 percent of these large airplanes at 90 percent useful load:	6,030'	6,800'
100 percent of these large airplanes at 60 percent useful load:	5,120'	5,500'
100 percent of these large airplanes at 90 percent useful load:	7,450'	7,450'
Large airplanes of greater than 60,000 pounds	Individual Assessment Required	

Source: FAA Airport Design Software

In reviewing the results of this analysis for Cape Cod Gateway Airport over a span of various aircraft types and useful loads, the recommended runway lengths ranges between 4,700 feet and 7,450 feet based on dry runway conditions. However, when considering wet runway conditions, which is not atypical at Cape Cod Gateway Airport, the minimum runway length increases from 5,270 feet to 7,450 feet, which exceeds the existing Runway 15-33 length of 5,255 feet. (It should also be noted that when such inclement weather is experienced at the Airport, aircraft will tend to operate on Runway 15-33 since it is considered to be the bad weather runway).

In essence, this analysis results in drawing the reasonable conclusion that Runway 15-33 is currently at the absolute minimum length required to safely accommodate the majority of the families of aircraft with a MTOW between 12,500 pounds and 60,000 pounds, which encapsulates most general aviation turbine-engine aircraft. Any enhancement to the existing length would increase the level of safety and operational effectiveness for the aircraft operating on Runway 15-33.

The second runway length methodology applied within the 2022 Cape Cod Gateway Airport Master Plan was based on conducting individual operational assessments for the range of the largest aircraft (with a MTOW of greater than 60,000 pounds) anticipated to operate on Runway 15-33 in the near future. This included both critical design aircraft (Embraer E190 and Gulfstream V/G500) as well as other large aircraft including Bombardier Global 5000/Express, Airbus A220, and Airbus A320.

[4] AC No. 35-21, *Takeoff Performance Data for Operations on Contaminated Runways*, provides guidance and standardized methods for developing takeoff performance data for operations on contaminated runways.

As suggested above, runway length recommendations for aircraft are a function of a wide variety of factors, and for aircraft with MTOW, of greater than 60,000 pounds, those variables and the resultant runway length recommendations are often amplified. Thus, to take a measured and balanced approach, the runway length analysis for each of these aircraft not only included a complete runway length recommendation assessment based on their individual MTOWs, but it also established a typical stage length for each aircraft that is normally experienced at Cape Cod Gateway Airport. The two-step runway length analysis was done to help ensure that the recommendations were moderated and scaled to the actual needs of Cape Cod Gateway Airport.

Table 2.2-4 provides a summary of the detailed analysis conducted within the Master Plan. For each aircraft type, the range of potential runway lengths were determined (variability of the lengths is based on temperatures and payloads), as well as the runway length required to execute a typical flight from Cape Cod Gateway Airport, assuming standard weather conditions. The latter analysis incorporated data relative to the takeoff weight of the typical aircraft based on reasonable payload assumptions (e.g., passengers, luggage, etc.) and fuel weights of a typical operation airport within a 1,500 nautical mile (approximately 1,726 miles) range (stage length). This results in a more conservative analysis with reduced runway length recommendations as part of this EA/EIR analysis.

This approach reflects what is typically experienced at Cape Cod Gateway Airport as opposed to a maximum capability analysis, which is typical of a master plan study. Using information on typical destinations aircraft flying from the Airport are traveling to balance typical operational requirements and optimal operational requirements. However, it must be recognized that while these length requirements reflect operations that might be most typically expected, it is important for an airport to also consider actively enhancing aircraft capabilities beyond just those normal operations.

Table 2.2-4 Runway Length Analysis

Aircraft Type	Runway Length Recommendation - Standard Analysis at MTOW (feet)	Runway Length Recommendation - HYA Adjusted Analysis (feet, assumptions)
Embraer E190* (Existing Commercial)	6,115 – 8,915	5,290 (HYA-JFK)
Gulfstream V/G500* (Existing GA)	6,585 – 6,585	6,054 (1,500 NM)
Bombardier Global Express (Existing GA)	5,540 – 6,540	5,958 (1,500 NM)
A220 (Future Commercial)	6,200 – 9,415	5,865 (HYA-JFK)
A320 (Future Commercial)	5,515 – 7,515	6,000 (HYA-JFK)

McFarland Johnson analysis, 2020.
* Cape Cod Gateway Airport (HYA) Critical Design Aircraft per 2022 Cape Cod Gateway Airport Master Plan

As shown in this table, the fleet mix operating at MTOW has a range of runway length recommendations that extends from a minimum of 5,515 feet to a maximum of 9,415 feet (existing Runway 15-33 is 5,255 feet). In terms of runway lengths based on typical operations at Cape Cod Gateway Airport, the range extends from 5,290 feet to 6,054 feet, which happens to reflect the requirements for the existing design aircraft.

The previous sections presented the three different runway length evaluation methodologies employed within the 2022 Master Plan, all of which resulted in consistent results. **Figure 2.2-5** below aggregates those results into a single graphic that presents a range of aircraft that typically operate at Cape Cod Gateway Airport and their general takeoff runway length requirements compared against Runway 15-33's existing length, the range of lengths identified by the two FAA methodologies (for aircraft with MTOWs below and above 60,000 pounds), and range of lengths identified by the modified methodology designed to reflect typical operations at Cape Cod Gateway Airport.

Also included in **Figure 2.2-5** is the Airport Master Plan recommended runway length of 6,550 feet, which was established through an internal coordination process that weighed the various runway requirements against the physical constraints of the Airport site. The runway length of 6,550 feet represented the maximum runway length that could reasonably be achieved for Runway 15-33 without experiencing excessive physical, operational, and community impacts.

Additionally, the regional role of Cape Cod Gateway Airport must be acknowledged and evaluated. Per H.R.302 - FAA Reauthorization Act of 2018, Section 47106 of title 49 of the United States Code, *"When evaluating the master plan of an airport [...], the Secretary shall take into account (1) the role an airport plays with respect to medical emergencies and evacuations; and (2) the role the airport plays in emergency or disaster preparedness in the community served by the airport*."[5]

Cape Cod Gateway Airport is the only public-use airport on Cape Cod having runways that exceed 5,000 feet. In an emergency, the Airport would play an essential role for the region including providing access to first responders, landing, and storing supplies for the area, as well as potentially facilitating evacuations of large portions of the population. For these purposes, aircraft similar to Boeing 737(BBJ)/A320-type aircraft must be factored into the runway length determination. These aircraft have takeoff distance requirements of approximately 6,500 feet with a full payload (to operate at that length and at full payload, these aircraft would have to take severe weight penalties that would limit the distance they could travel).

Conclusion

Based on the Airport Master Plan length analysis of the existing general aviation fleet mix as well as each of the individual aircraft greater than 60,000 pounds that regularly use the Airport, the range for runway length of between 6,000 and 6,400 feet was identified to meet the existing and future demands of the family of aircraft using the Airport while minimizing community impacts. As Cape Cod Gateway Airport's primary bad weather runway and the runway with the greatest ability to be extended, Runway 15-33 is the preferred runway for an extension. The Proposed Action to extend the runway to a total length of 6,150 feet meets the need to enhance airport operational safety by largely meeting the runway length requirements of aircraft that regularly utilize the Airport and balances community impacts by maintaining the runway and safety areas on the Airport. A displaced

[5] https://www.congress.gov/115/plaws/publ254/PLAW-115publ254.pdf

Bombardier Global Express 700

Embraer E 190

Dassault Falcon F7X

Gulfstream G500

Figure 2.2-5

Current Family of Aircraft at the Airport

threshold on Runway 15 increases the takeoff clearance. The Proposed Action also enhances overall regional safety and emergency response capabilities by providing needed runway length. This runway extension length is reduced from the Master Plan's recommended length by 400 feet through the elimination of the 33-end extension. The revised runway length reduction is based on community commentary and additional feasibility analyses.

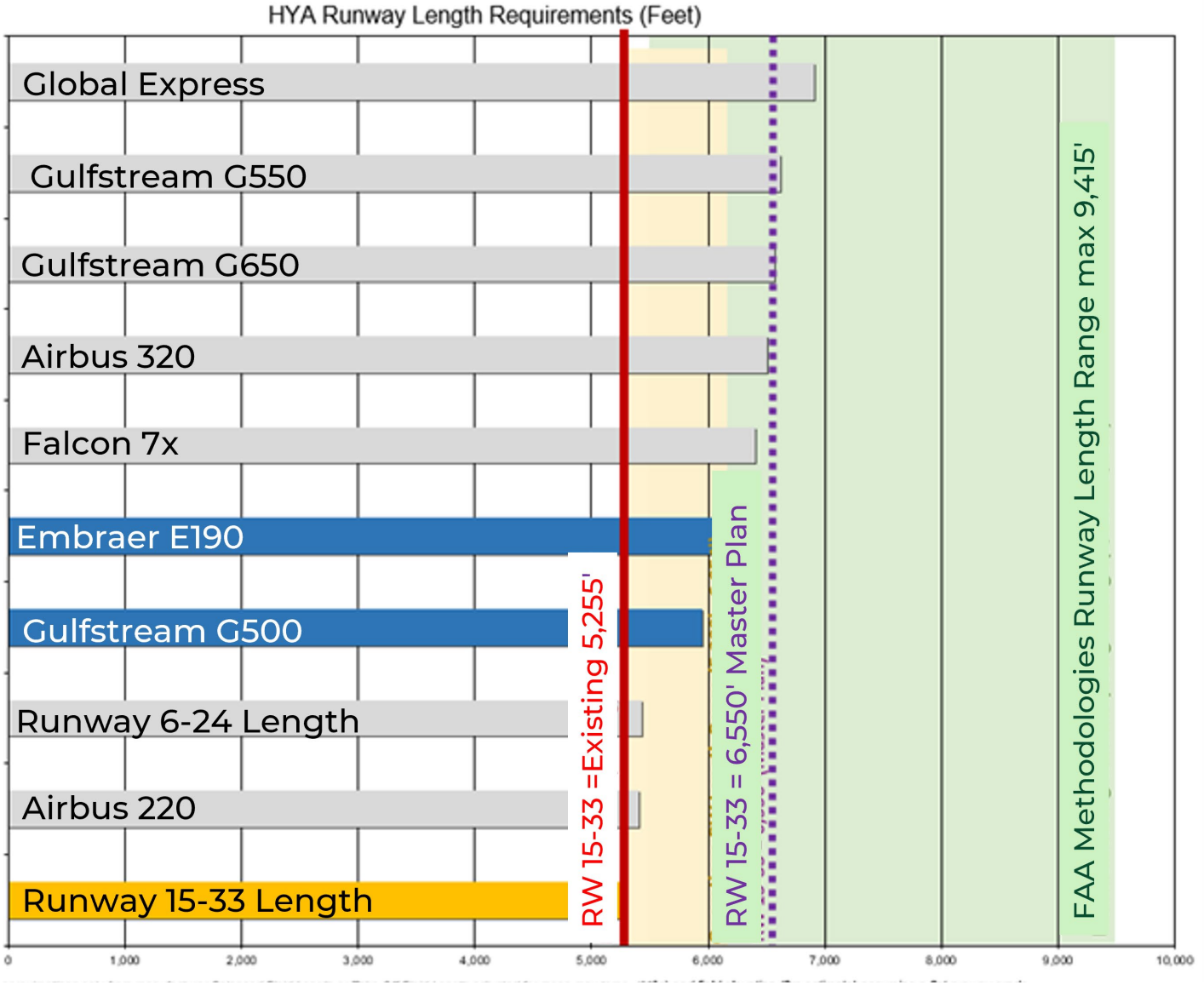
2.2.1.5 Extend Taxiway A (including new Taxiway A1 and Taxiway A4)

Existing Taxiway A measures 50 feet wide and serves as a full-length parallel taxiway to Runway 15-33 adjacent to the Terminal Ramp. The Proposed Action proposes to extend Taxiway A and construct new connectors (Taxiway A1 and Taxiway A4) to align with the new Runway 15 end as described in Section 2.2.1.4. Full parallel taxiways are recommended as a standard airport design element. To optimize operational safety and efficiency, taxiways must extend to the runway ends. This eliminates the need for "back-taxiing" operations and enables runway crossings to occur at runway ends, the safest location to cross a runway. This Project maintains this functionality as part of the proposed runway extension project. See **Figure 2.2-6**.

2.2.1.6 Aeronautical Development Areas

Based on the Airport Master Plan forecasted demand, between 40,000 sf and 67,000 sf of additional apron space will be required by 2040. There is an existing shortage of conventional hangar space per the Airport Master Plan and a waiting list for existing Airport hangars. During the preparation of this Draft EA/EIR, the list has 25 aircraft owners actively waiting for a hangar. The Master Plan recommends planning for a mix of both new individual hangars and conventional hangars to account for growing demand and new businesses' needs. See **Figures 2.2-7** and **2.2-8**.

The Proposed Action allocates a combined 42 acres of Airport land divided into two areas (East and North Ramps) for additional aeronautical development. The relocation of Taxiway B described above would open up additional space to the areas that are currently in use for aeronautical activities at the East Ramp. These ramp development areas include future space for transient aircraft parking as well as additional hangars or other aeronautical businesses and will be developed as opportunities for growth arise. Future hangar development will accommodate longer wingspans to reflect the needs associated with newer aircraft types. For example, the typical existing T-hangar door width is 42 feet, while newer ADG I aircraft often have wingspans of 44 to 48 feet.



Source: Airport Solutions Group 2023.

** HYA Critical Design Aircraft are shown in yellow*

Figure 2.2-6

Runway Length Analysis Summary

Figure 2.2-7

Conceptual Layout of East Ramp Development

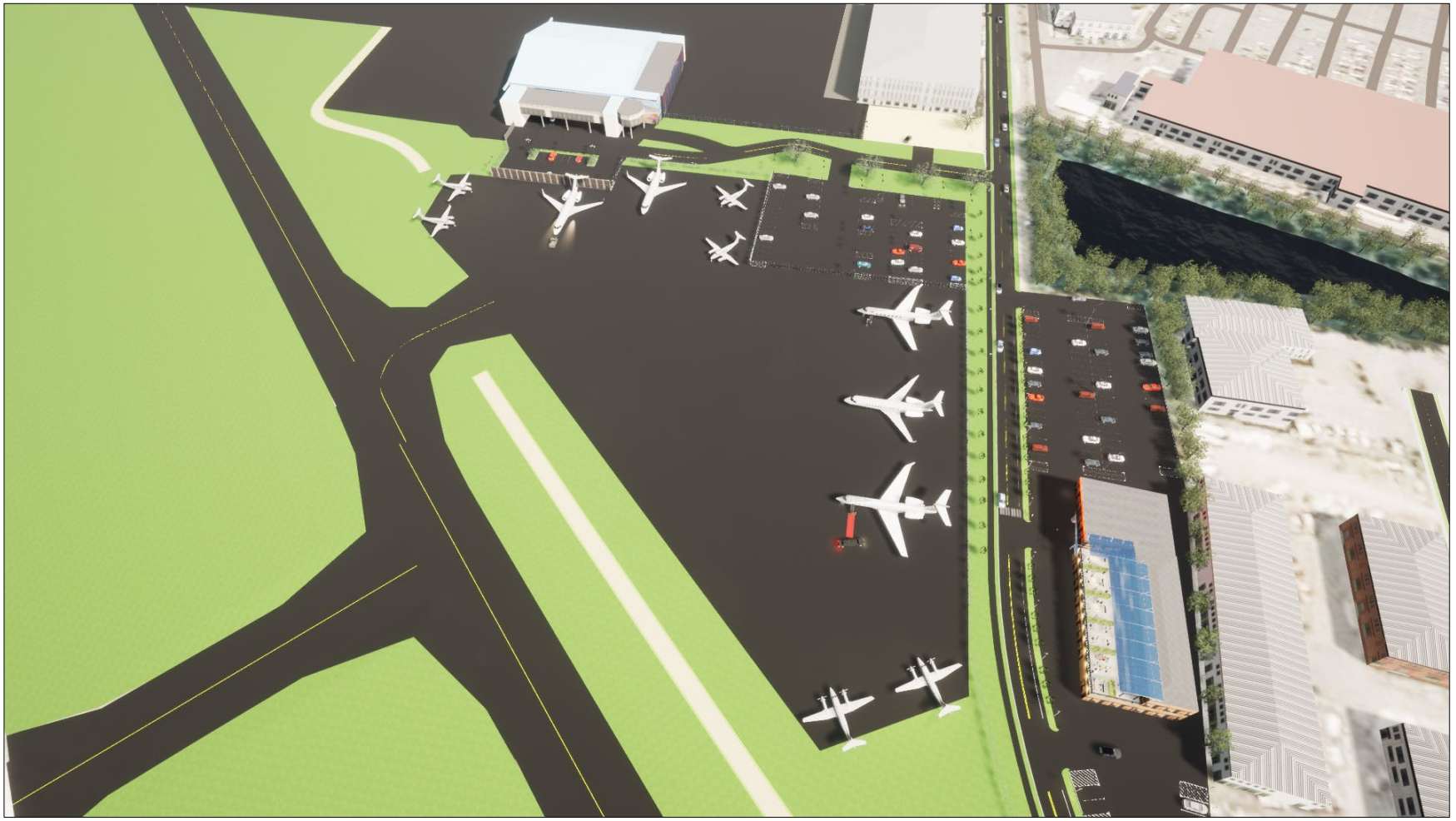


Figure 2.2-8

Conceptual Layout of North Ramp Aircraft Tie-Down and Parking

Table 2.2-5 Summary of Need and Purpose of Proposed Projects

Measure	Deficiency	Need and Purpose
Construction of Partial Parallel Taxiway D	♦ Non-Standard FAA airfield geometry ♦ Non-right-angle taxiway ♦ Provides direct access from the ramp to the runway	♦ Increases airfield safety and efficiency. ♦ Eliminates direct ramp to runway access. ♦ Eliminates high-energy crossing. ♦ Prevents two-way taxing.
Removal of Taxiway E and Runup Area and Construction of Engine runup Area	♦ Non-Standard FAA airfield geometry ♦ Non-standard taxiway to runway separation ♦ Non-right-angle taxiway	♦ Increases airfield safety and efficiency.
Reconstruction and Relocation of Taxiway B	♦ Does not meet taxiway width for TDG 3. ♦ Relocation to allow for future hangar development within East Apron ♦ Does not meet runway ends	♦ Increases safety of aircraft operating at the airport. ♦ Maximizes aeronautical development within existing developed / disturbed areas. Allows access via new roadway along Mary Dunn Way.
Runway 15-33 extension	♦ Current runway lengths do not meet operational and efficiency requirements of the critical design aircraft	♦ Increases safety of aircraft operating at the airport.
Construction of Runway 6-24 EMAS	♦ Runway 6-24 Runway Safety Area does not meet design standards due to existing land constraints.	♦ Increases safety of aircraft operating at the airport.

2.2.2 Landside Improvements

2.2.2.1 Construct Electric Aircraft Support Equipment

Aircraft manufacturers have begun investing in the development of all-electric aircraft. The development has focused predominantly on nine-seat and smaller aircraft. The key planning considerations associated with the development of electric aircraft include the provision of the necessary airport facilities for charging, maintenance, and storage.

To respond to industry developments, the Proposed Action includes ramp space for up to six electric aircraft parking for itinerant ADG II aircraft. The Airport has identified space on either side of the terminal ramp (see **Figure 1.1-1**) to plan for electric aircraft infrastructure for both GA and commercial aircraft. As electric aircraft technology continues to advance, the Airport is planning for access to charging and parking options for electrical aircraft.

MassDOT Aeronautics recently received a US$1.95 million grant award to be used in the planning of a smart microgrid at Cape Cod Gateway Airport. The microgrid will generate and distribute clean, reliable power, not only to the Airport, but for charging electric aircraft, and electric ground vehicles

(including buses). In collaboration with the Cape Cod Regional Transit Authority (CCRTA), the initiative will increase access to clean energy independence while supporting communities near the Airport.

2.2.3 Airspace Control Improvements

2.2.3.1 Runway 15-33 RSA and Runway Object Free Area Avigation Easements

The FAA defines Runway Object Free Areas (ROFAs) as an area cleared of all objects except those that are related to navigational aids and aircraft ground maneuvering. ROFA is also centered around runways to enhance the safety of aircraft operations. The Proposed Action will acquire avigation easements from willing parties designed to enhance the Airport's control of the existing ROFAs. FAA design standards for ROFAs surrounding runways serving AAC-ADG C-III aircraft are a width of 800 feet, a length that extends 600 feet prior to the landing threshold, and a length that extends 1,000 feet beyond the runway end. ROFAs and objects within it should be at or below the nearest Runway Safety Area elevation. A total of four easements for 0.8 acres have been identified for future easement acquisition (on a seller willing basis) for existing airfield conditions.

2.2.3.2 Enhance Airport control over Runway Protection Zones

Runway Protection Zones (RPZs) are large trapezoidal areas on the ground off each runway end that are within aircraft approach and departure paths (see FAA AC 150/5300-13 Change 11, Appendix 14 for approach and departure RPZs). The RPZ is intended to enhance the protection of people and property on the ground. Many land uses including residential, churches, and fuel storage are prohibited by FAA standards within these areas. These limitations are only applicable if the RPZ is owned or controlled by the Airport sponsor.

Under existing conditions at the Airport, areas within RPZs that are not under Airport control via avigation easements or fee simple include all portions of the Runway 6 RPZs west of Iyannough Road (71 parcels), the north and southwest corners of the Runway 15 RPZ (15 parcels), the southern corner of the Runway 24 RPZ (12 parcels), and the eastern portion of the Runway 33 RPZ (36 parcels), for a total of 44 acres/134 parcels. Airport control of these areas could be obtained through direct property acquisition or easements or zoning to control development and land use activities.

Avigation easement acquisition off the 15-end, to prevent future obstructions, is required for the runway extension. A total of four additional full or partial easements will be pursued on a willing seller basis (see **Figure 2.2-3**). These easements are primarily commercial properties located on Independence Drive, Thornton Drive and Kidd's Hill Road. Layout plans depicting these parcels identified for easement acquisition for existing or proposed RPZs are included in **Appendix D**.

The Proposed Action will acquire avigation easements from willing parties designed to bring both existing RPZs and the proposed Runway 15 RPZ into Airport control.

Chapter 3.0

Proposed Action Description

3.0 PROPOSED ACTION DESCRIPTION

This chapter describes the 2022 Master Plan projects, both airside, airspace, and landside facility requirements, necessary to enhance safety and efficiency and meet requirements of existing aircraft families at Cape Cod Gateway Airport (the Airport) in accordance with Federal Aviation Administration (FAA) design criteria and safety standards over the next 20 years. Additionally, projects are identified that enhance economic activity and revenue for the Airport, as well as projects to achieve green energy goals.

3.1 Airside Facilities

Airside facilities are those airport layout components that are directly related to the arrival and departure of aircraft, primarily runways and taxiways and their associated safety areas. This section addresses the projects determined to be necessary to bring the airside portion of the airport into compliance with FAA design criteria and standard geometry.

3.1.1 Construct Partial Parallel Taxiway D to Runway 15-33

This Proposed Action involves construction of a new partial parallel taxiway east of Runway 15-33 with a standard 400-foot runway centerline to taxiway centerline separation. It will extend from the existing Taxiway A1 across existing Taxiway D and Runway 6-24 to the proposed relocated Taxiway B (see Section 3.1.3 below). This taxiway would be approximately 3,700 feet in length, 50 feet wide, and tie in with the existing/remaining taxiway. Ultimately, this new partial parallel taxiway will be named Taxiway D. This Project also includes the removal of the portion of existing Taxiway D between existing Taxiway A across Runway 15-33 and up to the proposed new partial parallel taxiway. Unpaved Airport perimeter vehicular access would be provided on the north side of the new taxiway. Construction of Taxiway D will result in a net increase of 3.78 acres of pavement. Stormwater management infrastructure will be designed to comply with regulatory requirements for managing runoff associated with this impervious surface.

Due to the required runway to taxiway separation distance, the taxiway pavements and associated taxiway object free and safety area construction will impact wetland resource areas associated with Upper Gate Pond, requiring approximately 6,000 cubic yards (cy) of fill material. Approximately 12,700 sf of Land Under Water (LUW) and approximately 4,600 sf of Bordering Vegetated Wetlands (BVW) will be permanently filled. Grading associated with the taxiway and runup area will result in an excess of 17,500 cy of material that can be re-used on other projects on Airport property. Additionally, approximately 1.54 acres of forested upland areas and approximately 3.37 acres of shrub-scrub upland areas will be impacted for the construction of this Project.

The proposed new partial parallel Taxiway D enhances safety by eliminating direct access from the North Ramp to Runway 15-33 that can lead to pilots missing hold lines and causing a runway incursion. The new taxiway also eliminates the y-shaped (non-right angle) runway crossing for Runway 15-33 and the high-energy crossing on Runway 15-33. A non-right angle taxiway approaching a runway can lead the taxiing aircraft to inadvertently enter the runway.

3.1.2 Remove Taxiway E and Existing Runup Area/Construct a Runup Area for Partial Parallel Taxiway D

The Proposed Action will remove existing Taxiway E and the aircraft runup area (pit), correcting non-right angle geometry at Runway 15-33 (taxiway Intersecting runway at non-right angle). The existing Taxiway E measures 50 feet wide and connects Runway 15-33 to an approximately ±42,000 sf engine run-up area, which currently does not have a sound barrier.

Construction of a new run-up area along the north side of the proposed partial parallel Taxiway D (discussed above) will accommodate the existing fleet of aircraft using the current run-up pad (including the Cessna 402 and Tecnam P2012). A noise wall would be constructed adjacent to the runup area to provide noise mitigation for surrounding areas.

3.1.3 Realign and Reconstruction Taxiway B

The Proposed Action would re-align Taxiway B to a standard 400-foot separation south of Runway 6-24 to separate the taxiway from the East Apron. The proposed Taxiway B would be widened to 50 feet to meet taxiway Design Group 3 standards to optimize existing and future aircraft movement. Taxiway B would be 4,000 feet long. The Proposed Action would also extend Taxiway B northward by 750 feet to the south of the existing glide slope while the TOFA would remain clear of the glide slope. Portions of the taxiway safety areas are not currently up to standard. All safety areas would be brought to the correct grades. Unpaved Airport perimeter vehicular access would be provided from the East Ramp / end of Mary Dunn Way along the south side of the new taxiway, meeting the existing access road near the end of the runway by the fenceline.

The total area of disturbance including pavement removal, turf removal and grading is approximately 19.2 acres. The net gain in impervious surface is 5.2 acres. There will be no impacts on wetland resource areas as part of this realignment. Due to the grading required associated with the safety areas and taxiway construction, this Project will require a net import of fill material of approximately 23,865 cy. Stormwater management infrastructure will be designed to comply with standards and provide an improvement over existing conditions.

3.1.4 Runway 15-33 and Taxiway A Extension

The Proposed Action would extend Runway 15-33 by 895 feet on the 15-end (western end) to a total length of 6,150 feet from 5,255 feet, based on the runway length analysis for the critical aircraft for the Airport identified in the Master Plan and updated analysis in Chapter 4.0 of this document. The extension would maintain the existing width of 150 feet. Grading of a new turf runway safety area would extend from the end of the runway by 1,000 feet. Taxiway A will be extended to the new end of the runway (see discussion below). Additionally, Runway 15 Precision Approach Path Indicators (PAPI) will be relocated for the new end of runway. These lights consist of four light boxes arranged perpendicular to the end of the runway and provide a red and white light projection pattern along the descent path to the touchdown point on the runway. There will be no impacts on wetland resource areas as part of this extension nor required tree removals.

The Proposed Action would also extend Taxiway A by 895 feet to meet the new runway end to allow aircraft to exit the runway efficiently. The current width of 50 feet would be maintained for this extension. A full-length parallel taxiway enhances safety by reducing "back-taxiing" and runway crossings. Currently, Taxiway A measures 50 feet wide and serves as a full-length parallel taxiway to Runway 15-33 adjacent to the Terminal Ramp. As part of the extension of Taxiway A, a new stub taxiway, Taxiway A4, would be constructed to connect Runway 15-33 to Taxiway A approximately 5,380 feet from the Runway 15 threshold.

Due to the grading required associated with the safety areas and runway construction, a portion of the existing runway will also be reconstructed. This includes elevating the grades of a portion of the existing runway to meet the new runway extension. Because of this change in grade, this Project will require a net import of fill material of 23,865 cy. Impacts to existing turf area will comprise 42.63 acres, inclusive of the new runway safety areas extending from the end of the runway and the edges of pavement along with taxiway safety areas. These areas will be restored to turf. There will be a net increase in pavement of approximately 3.25 acres. Approximately 5.7 acres of existing runway and taxiway pavement will be reconstructed. Stormwater management infrastructure will be designed to comply with Massachusetts Stormwater Management Standards and will seek to both provide an improvement over existing conditions and increased rainfall events.

3.1.5 Aeronautical Development Areas

The Proposed Action includes two areas for additional aeronautical development on the Airport for a combined 42 acres - East Ramp and North Ramp - as opportunities for growth arise. These ramp development areas would include space for transient aircraft parking as well as additional hangars or other aeronautical businesses. Future hangar development could consider longer wingspans, which are a feature of modern single- and multiengine- aircraft. The typical T-hangar door width is 42 feet and modern ADG I aircraft have wingspans of 44 to 48 feet. The North Ramp area is already paved.

Based on forecasted demand, between 40,000 sf and 67,000 sf of additional apron space will be required by 2040. There is also an existing shortage of conventional hangar space per the Master Plan and current waiting list for hangars maintained by the Airport. The additional space proposed at the East Ramp would require the clearing of 6.11 acres of trees and the addition of 9.1 acres of impervious surface, inclusive of potential hangar buildings. There are no wetland resource area impacts associated with this Project. Any development projects at the East Ramp would be required to avoid disturbance of the cap of the PFAS disposal area (see Section 6.13.6 for additional discussion). Stormwater management infrastructure will be designed to comply with Massachusetts Stormwater Management Standards and will seek to provide an improvement over both existing conditions and increased rainfall events. Hangars at the East Ramp would have all water and sewer service provided by existing mains installed in 2022 along Mary Dunn Way. Connections to these mains would be required by the individual hangar developers. Conceptual layouts of these ramp development areas are shown in **Figure 2.2-7**.

3.2 Landside Improvements

Landside improvements are those projects which support the operations of the Airport.

3.2.1 Construct Seasonal SRE and Maintenance Facility

The Proposed Action will construct a new 20,000 sf building for storage of the existing maintenance vehicles and snow removal equipment (SRE). This Project will supplement the existing storage facility and meet the needs of the Airport for SRE storage. The Airport operations staff performs daily maintenance and inspection of airfield facilities, including snow removal in the winter months. Airfield maintenance and SRE are housed in a shared facility with Aircraft Rescue and Fire Fighting (ARFF). Space for all vehicles and maintenance equipment is not currently available in the existing building. It has been determined that a 20,000 sf building will meet storage needs. Currently, there is not enough space in the SRE/maintenance building to store all necessary equipment. A seasonal vehicle storage structure would be constructed on the northeast side of the Airport, within the East Ramp. This facility would function as winter vehicle and equipment storage in the summer and as summer vehicle and equipment storage in the winter.

3.2.2 Construct Electric Aircraft Support Equipment

To respond to industry developments, the Proposed Action includes space for up to six electric aircraft parking for itinerant Airplane Design Group (ADG) II aircraft. The Airport has identified space on either side of the terminal (see **Figure 1.1-3**) to plan for electric aircraft infrastructure for both GA and commercial aircraft. This equipment will support the charging of electric aircraft.

3.2.3 Smart Microgrid

MassDOT Aeronautics recently received a US$2 million grant award to be used in the planning of a smart microgrid at the Airport. A microgrid is a local energy production and distribution network that can function independently when disconnected from the main electrical grid (via battery storage and onsite renewables). The microgrid is an important component to the Airport's plan to reduce future emissions based on new abilities to generate and store green energy.

The microgrid will generate and distribute clean, reliable power, not only to the Airport, but for charging electric aircraft, and electric ground vehicles (including buses). In collaboration with the Cape Cod Regional Transit Authority (CCRTA), the initiative will increase access to clean energy independence while supporting communities near the Airport with cleaner transportation options. The microgrid enhances the Airport's plans to implement electric aircraft charging infrastructure described above and pursue opportunities that are less reliant on external/conventional power sources.

Phase I involves the study and planning of a microgrid placed at the Airport. Phase II will consist of funding to construct the microgrid infrastructure.

3.3 Airspace Control Improvements

3.3.1 Runway 33 RSA and Runway Object Free Area (ROFA) Avigation Easements

The Proposed Action will acquire avigation easements from willing parties designed to bring existing Runway Object Free Areas (ROFAs) into Airport control. Currently, not all the ROFAs are within airport control for existing conditions. A total of four (4) easements for 0.8 acres have been identified as out of airport control, associated with Runway 33 end. These are identified as Parcels 33-1 through 33-4 on the Town parcel map (see **Figure 3.3-1**). Roadways such as Iyannough Road and Yarmouth Road are not proposed for acquisition. Existing airport penetrations into ROFA are managed through modification to standards approved by the FAA every five years.

Table 3.3-1 ROFA Penetrations

Location	Penetration
Runway 33 End	Iyannough Road, Mary Dunn Way, four off-Airport buildings, Airport perimeter fence, ARFF/Maintenance/SRE Ramp;
Runway 24 End	Yarmouth Road, railroad tracks, Airport perimeter fence
Runway 15	Glideslope runway visual range (RVR), wind cone
Runway 15-33 along the side of the runway	Distance measuring equipment (DME), precision approach path indicator (PAPI) power and control units
Runway 6-24 along the side of the runway	Localizer, DME, PAPI power and control units, glideslope, ASOS

3.3.2 Enhance Airport control over off-Airport Property within Runway Protection Zones

The Proposed Action will acquire avigation easements from willing parties designed to bring existing Runway Protection Zones (RPZs) into Airport control. Under existing conditions at the Airport, areas within RPZs that are not under Airport control via either avigation easements or fee simple include all portions of the Runway 6 RPZs west of Iyannough Road (70 parcels), the north and southwest corners of the Runway 15 RPZ (15 parcels), the southern corner of the Runway 24 RPZ (12 parcels), and the eastern portion of the Runway 33 RPZ (36 parcels), for a total of 44 acres/133 parcels. Airport control of these areas could be obtained through direct property acquisition or easements or zoning to control development and land use activities.

Existing avigation easements are identified on Sheet 23 of the Airport Layout Plan in **Appendix D**. Avigation easement acquisition off the 15-end, to prevent future obstructions, is required for the runway extension within the Town of Barnstable. A total of 12 additional partial easements will be pursued on a willing seller basis (see **Figure 3.3-2** and **Table 3.3-2**). These easements are primarily commercial properties located on Independence Drive, Thornton Drive, and Kidd's Hill Road. Layout plans depicting these parcels identified for easement acquisition for existing or proposed RPZs are included in **Appendix D**.

Property ID	Lot Size (Ac)	Lot Size (sqft)*	Owner	Location	RPZ	Easement Type	Additional Easement Area (RPZ)	Additional Easement Area (ROFA)	Existing Easement Area
327_156_001	9.51	414257	MASSACHUSETTS, COMMONWEALTH OF	215 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	PARTIAL	21921.7		0
328_109	0.11	4792	PB&C LLC	258 IYANNOUGH ROAD/RTE 28BARNSTABLE	EXISTING	PARTIAL	153.3	1540.9	0
328_110	0.13	5663	CYR, LUKE & MITSIS, ALEC	244 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	FULL	4503.9	2808.5	0
328_111	0.23	10019	GLADISH, SCOTT P, TR	240 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	FULL	12103.1	COVERED BY RPZ	0
328_112	0.37	16117	H&B PETROLEUM INC	230 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	FULL	17870.2	COVERED BY RPZ	0
328_126	0.71	30928	HOP LLC	33 BROOKS ROAD, HYANNIS	EXISTING	PARTIAL	11974.7		0
328_127	2.36	103673	BARNSTABLE, TOWN OF	23 BROOKS ROAD, HYANNIS	TYPE 6 APPROACH	NONE	-		0
328_131	0.86	37462	ATLANTIS IYANOUGH REALTY LLC	180 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	PARTIAL	47869.0		0
328_132_00A	0	0	BAKER, ROBERT E & DONNA & WHITE, LINDA T	192 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	PARTIAL	20786.4		0
328_137	0.48	20909	MASSACHUSETTS, COMMONWEALTH OF	201 YARMOUTH ROAD, HYANNIS	EXISTING	PARTIAL	21916.9		0
328_138	0.36	15682	MASSACHUSETTS, COMMONWEALTH OF	231 YARMOUTH ROAD, HYANNIS	EXISTING	PARTIAL	15817.7		0
328_139	0.32	13939	ROBICHAUD, JOHN R & JAMES FRANCIS	279 YARMOUTH ROAD, HYANNIS	EXISTING	PARTIAL	2068.7		0
328_142_001	20.9	910408	BARNSTABLE, TOWN OF	47 OLD YARMOUTH ROAD, HYANNIS	EXISTING	PARTIAL	50893.9		0
328_142_002	1.83	79715	BARNSTABLE, TOWN OF	0 YARMOUTH ROAD, HYANNIS	EXISTING	PARTIAL	63762.1		0
328_143	0.17	7405	KORPELA, TONI TAIMI ESTER ESTATE OF	118 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	FULL	7066.5		0
328_144	0.21	9148	LOPES-MORRIS, CAROL	116 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	FULL	7383.6		0
328_145	0.38	16553	KORPELA, TONI TAIMI ESTER ESTATE OF	114 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	PARTIAL	2234.0		0
328_147	0.8	34848	MASSACHUSETTS, COMMONWEALTH OF	126 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	PARTIAL	29553.5		0
328_148	0.29	12632	MACGREGOR, J BRUCE TR	210 YARMOUTH ROAD, HYANNIS	EXISTING	FULL	11206.8		0
328_149	0.35	15246	MACDONALD, DOUGLAS E TR	202 YARMOUTH ROAD, HYANNIS	EXISTING	PARTIAL	16534.7		0
328_151	0.82	35719	HESS RETAIL STORES LLC	156 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	FULL	39741.0		0
328_156_002	0.12	5227	TRACY, CONSTANCE	131 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	PARTIAL	2465.8		0
328_157	0.14	6098	153 REALTY LLC	151 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	PARTIAL	28890.2		0
328_158	0.21	9148	MAHONEY, RICHARD G & MAUREEN J	128 CAMP STREET, HYANNIS	EXISTING	FULL	12193.9		0
328_159	0.17	7405	ALI REALTY CORPORATION	126 CAMP STREET, HYANNIS	EXISTING	PARTIAL	6442.0		0
328_160	0.39	16988	CICCARELLI, EUGENE C III & EVANS, SUSAN	116 CAMP STREET, HYANNIS	EXISTING	PARTIAL	62.4		0
328_183	10.17	443007	MASSACHUSETTS, COMMONWEALTH OF	0 YARMOUTH RD HYANNIS	EXISTING	PARTIAL	42044.1		0
328_195	0.69	30057	140 YARMOUTH ROAD LLC	140 YARMOUTH ROAD, HYANNIS	EXISTING	PARTIAL	4861.4		0
328_200	0.09	3920	MASSACHUSETTS, COMMONWEALTH OF	0 IYANNOUGH ROAD/RTE 28 BARNSTABLE	EXISTING	PARTIAL	2463.2		0
328_202	0.74	32235	GAS INC	193 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	PARTIAL	2419.7		0
328_203	0.73	31799	AMERIGAS PROPANE LP	193 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	PARTIAL	17523.8		0
328_205	0.17	7405	HYANNIS SERIES ONE LLC	225 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	PARTIAL	251.9		0
328_229	0.16	6970	MASSACHUSETTS, COMMONWEALTH OF	247 YARMOUTH ROAD, HYANNIS	EXISTING	PARTIAL	6878.9		0
328_231	0.5	21780	FINKEL, HOWARD J TR	148 CEDAR STREET, HYANNIS	EXISTING	PARTIAL	2790.5		0
328_237	0.72	31363	SHORE, CARYN & CORD M TRS	207 IYANNOUGH ROAD/RTE 28, HYANNIS	EXISTING	PARTIAL	7886.0		0
328_238	1.02	44431	CARLIN CORNER, LLC	165 YARMOUTH ROAD, HYANNIS	EXISTING	PARTIAL	23916.2		0

EXISTING
RW33 No Extension
RUNWAY PROTECTION ZONE (RPZ)

LEGEND

= 0 EXISTING EASEMENTS

= 36 EASEMENTS REQUIRED FOR EXISTING CONDITIONS

THE AIRSPACE DEPICTED HEREIN IS BASED ON THE FOLLOWING:

1. POINT DATA OF EXISTING CONDITIONS WAS OBTAINED FROM THE 2021 AIRPORT MASTER PLAN; AREAS NOT SHOWN IN RED OR GREEN REFLECT NO AVAILABLE DATA.
2. THE PROPOSED PAVEMENT LAYOUT, LANDING THRESHOLDS, AND AIRSPACE SURFACES FOR THE PREFERRED ALTERNATIVE WAS OBTAINED FROM THE 2021 AIRPORT MASTER PLAN.
3. THE PROPOSED PAVEMENT LAYOUT, LANDING THRESHOLDS, AND AIRSPACE SURFACES FOR EIR ALTERNATIVES #1 AND #2 REFLECT DRAFT PROPOSALS UNDER THE 2022 EIR PROJECT.

DEPARTURE RUNWAY PROTECTION ZONE (RPZ)

RUNWAY OBJECT FREE AREA (ROFA)

EXISTING RW END (NO RW EXTENSION)

Type 6 Approach Penetration (1371sqft)

PROPOSED ROFA EASEMENTS

APPROACH RUNWAY PROTECTION ZONE (RPZ)

PROPERTY LINE

ROFA

ASG
AVIATION SOLUTIONS GROUP LLC
AIRPORT CONSULTANTS
AIRPORT CONSULTANT ▼ BURLINGTON, MASSACHUSETTS
PHONE: 781.221.2266 FAX: 781.221.2277
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NO.	DESCRIPTION	BY	DATE

PROJECT: KHYA AMPU EA

OWNER: CAPE COD GATEWAY AIRPORT, TOWN OF BARNSTABLE, MA, 480 BARNSTABLE RD, HYANNIS, MA 02601

PROJECT NO.	119-005
DESIGNED BY	JJV
DRAWN BY	JJV
CHECKED BY	RJM
DATE	OCTOBER 2023
DRAWING SCALE	1" = 100'

SHEET TITLE: EXISTING RW 33 RPZ PROPOSED EASEMENTS

GRAPHIC SCALE: 0 50 100 200

DRAWING NO. 3

3 OF 3

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Figure 3.3-1: Runway 33 ROFA Easements and Proposed RPZ Easements for Existing Conditions

Runway 15 895 foot Extension

Property ID	Lot Size (Ac)	Lot Size (sqft)*	Owner	Location	RPZ	Easement Type	Additional Easement Area (Existing Runway)	Additional Easement Area (Extended Runway)	Existing Easement Area
294_079	2.46	107,158.03	FORTE FITNESS CENTER LLC	805 ATTUCKS LANE, HYANNIS	PROPOSED	PARTIAL			57,597.0
295_004_001	4.38	190,793.56	CAPE COD HOSPITAL	0 WILKENS LANE, BARNSTABLE	PROPOSED	PARTIAL	39,488.1	4,672.2	-
295_006_00A	0	-	THE LOFTY CLOTH LLC	12 THORNTON DRIVE, BARNSTABLE	PROPOSED	FULL		752.6	22,392.7
295_007_00F	0	-	JM BURKE PROPERTIES LLC	30 PERSEVERANCE WAY, BARNSTABLE	PROPOSED	FULL		95,409.0	-
295_008	2.07	90,169.56	SWITCH GEARS LP	60 PERSEVERANCE WAY, BARNSTABLE	PROPOSED	FULL		79,466.2	13,823.4
295_009	2.07	90,169.56	SWITCH GEARS LP	225 PERSEVERANCE WAY, BARNSTABLE	PROPOSED	PARTIAL		12,585.8	77,183.2
295_011	13.46	586,319.95	SWITCH GEARS LP	75 PERSEVERANCE WAY, BARNSTABLE	PROPOSED	PARTIAL	31,410.9	51,389.1	-
295_013_B01	0.49	21,344.49	INDEPENDENCE PARK INC	765 ATTUCKS LANE BARNSTABLE 02601	PROPOSED	PARTIAL			6,724.9
295_013_H01	2.32	101060	INDEPENDENCE PARK INC	765 ATTUCKS LANE, HYANNIS	PROPOSED	PARTIAL			38.7
295_018_01D	0		NADER, ALEXANDRE	700 ATTUCKS LANE #1D, BARNSTABLE	PROPOSED	PARTIAL			11,805.6
295_018_B01	2.07	90,169.56	RENAISSANCE 2000 LLC	750 ATTUCKS LANE, BARNSTABLE	PROPOSED	PARTIAL			65,878.6
295_020_B01	0.5	21,780.09	ZION CHURCH	805 ATTUCKS LANE BARNSTABLE 02601	PROPOSED	PARTIAL			21,274.3
295_020_H01	2.13	92,783.17	ZION CHURCH	805 ATTUCKS LANE, HYANNIS	PROPOSED	PARTIAL			37,871.3
295_030	2.18	94,961.18	BARNSTABLE, TOWN OF	0 INDEPENDENCE DRIVE, BARNSTABLE	PROPOSED	FULL		90,811.8	-
296_005_001	2.57	111,949.65	DAVLIN REALTY LLC	11 THORNTON DRIVE, BARNSTABLE	PROPOSED	PARTIAL	48,660.2	14,248.2	2,888.4
296_005_002	4.73	206,039.62	VICTORY CHAPEL CHRIST FELLOW CHURCH CC	20 MERCHANTS WAY, BARNSTABLE	PROPOSED	PARTIAL	554.8		-
296_007	0.49	21,344.49	THORNTON DRIVE LP	31 THORNTON DRIVE, BARNSTABLE	PROPOSED	FULL	21,316.5	308.9	-
296_00E_00A	0	-	AMARAL, WILLIAM A & RITA A	30 THORNTON DRIVE, BARNSTABLE	PROPOSED	FULL	4,938.8		3,772.8
296_009	0.48	20,908.88	GLOWACKI, WALTER J & WALTER J GLOWACKI	53 THORNTON DRIVE, BARNSTABLE	PROPOSED	PARTIAL	8,895.8	12,558.0	-
296_010	0.49	21,344.49	52 THORNTON DRIVE LLC	52 THORNTON DRIVE, BARNSTABLE	PROPOSED	FULL	21,494.5	236.4	-
296_012_00H	0	-	HULTEN, MARC R	72 THORNTON DRIVE, BARNSTABLE	PROPOSED	PARTIAL	7,942.0		-
296_025	9.73	423,940.50	ONE CENTER PLACE LP	400 KIDD'S HILL ROAD, BARNSTABLE	PROPOSED	FULL	68,569.6	88,550.9	275,736.9
296_031	6.31	274,864.70	COASTAL SUN LP	270 COMMUNICATION WAY, BARNSTABLE	PROPOSED	PARTIAL	61,760.7	65,732.4	-
313_005_B00	53.88	2,347,022.19	BARNSTABLE FIRE DISTRICT	223 BREED'S HILL ROAD, BARNSTABLE	PROPOSED	PARTIAL		79,051.9	-
314_023	5.63	245,243.78	S-E SNACK MA LLC	100 BREED'S HILL ROAD, BARNSTABLE	PROPOSED	PARTIAL		2,088.3	51,541.6
314_041_005	0	-	HYANNIS OFFICE PARK CENTER LP	270 COMMUNICATION WAY, BARNSTABLE	PROPOSED	PARTIAL	742.5		-

LEGEND

= 14 EXISTING EASEMENTS

= 15 EASEMENTS REQUIRED FOR EXISTING CONDITIONS

= 12 EASEMENTS REQUIRED FOR EXTENSION

THE AIRSPACE DEPICTED HEREIN IS BASED ON THE FOLLOWING:

1. POINT DATA OF EXISTING CONDITIONS WAS OBTAINED FROM THE 2021 AIRPORT MASTER PLAN; AREAS NOT SHOWN IN RED OR GREEN REFLECT NO AVAILABLE DATA.
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3. THE PROPOSED PAVEMENT LAYOUT, LANDING THRESHOLDS, AND AIRSPACE SURFACES FOR EIR ALTERNATIVES #1 AND #2 REFLECT DRAFT PROPOSALS UNDER THE 2022 EIR PROJECT.

EASEMENT FOR FUTURE CONDITIONS

EASEMENT FOR EXISTING CONDITIONS

PROPERTY LINE

EXISTING RPZ

895FT RW EXTENSION

DEPARTURE RUNWAY PROTECTION ZONE (RPZ) (FUTURE)

EXISTING EASEMENT

APPROACH RUNWAY PROTECTION ZONE (RPZ) (FUTURE)

ASG
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NO.	DATE	DESCRIPTION	BY

PROJECT: KHYA AMPU EA

OWNER: CAPE COD GATEWAY AIRPORT
TOWN OF BARNSTABLE, MA
480 BARNSTABLE RD, HYANNIS, MA 02601

PROJECT NO.	119-005
DESIGNED BY	JJV
DRAWN BY	JJV
CHECKED BY	RJM
DATE	OCTOBER 2023
DRAWING SCALE	1" = 150'

SHEET TITLE: EIR ALTERNATIVE #1 RW 15 RPZ PROPOSED EASEMENTS

GRAPHIC SCALE: 0 75 150 300

DRAWING NO. 2

2 OF 3

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Figure 3.3-2: Runway 15 Proposed RPZ Easements Acquisition for Runway Extension

Table 3.3-2 Avigation Easements Needed for Proposed Conditions associated with Runway 15 Extension

Parcel ID	Address	Acres	Full or Partial Easement
314-041-00S	270 Communication Way	0.017	Partial
296-005-001	11 Thornton Drive	1.11	Partial
296-009	53 Thornton Drive	0.2	Partial
296-025	400 Kidd's Hill Road	1.57	Partial
295-004-001	0 Wilkins Lane	0.77	Partial
295-011	75 Perseverance Way	0.72	Partial
296-008-0A	30 Thornton Drive	0.11	Partial
296-010	52 Thornton Drive	0.49	Partial
296-031	270 Communication Way	1.42	Partial
296-007	31 Thornton Drive	0.49	Partial
296-005-002	20 Merchants Way	0.01	Partial
296-012-00H	72 Thornton Drive	0.18	Partial
Total		7.11 ac	

3.4 Project Schedule

The Master Plan Projects are anticipated to be constructed in phases over the 20-year planning period. **Table 3.4-1** identifies the proposed phasing approach for the projects described in this Draft EA/EIR

The phasing periods have been developed to coordinate with the aviation forecasts presented in Chapter 1.0. The forecasts project aviation demand through 2040 from a base year of 2019. The Airport's Capital Improvement Plan (CIP) details the potential funding mechanisms and costs for implementing the Projects and is generally provided for a five-year period with updates annually. The ALP, Project Phasing Plan, Federal Aviation Administration (FAA) Airport Capital Improvement Plan (ACIP) which is typically the first five years of the CIP are all subject to review and comment by the FAA. Based on the current CIP and the current approved ALP, the Project's presented herein are proposed to be phased as follows for permitting and construction:

Table 3.4-1 Proposed Project Schedule

Project	2024	2025	2026	2027	2028	2029
Airside						
Relocate and Extend Taxiway B	--	-	Design/ Construct		-	-
Reconstruct and Realign Taxiways D/E, new run up ramp	Permit	Permit	-	Design/ Construct		-
Extend Runway 15-33	-	-	-	-	-	Design
Extend Taxiway A (including new Taxiway A and A4)	--	-	-	-	-	Design

Table 3.4-1 Proposed Project Schedule (Continued)

Project	2024	2025	2026	2027	2028	2029
Airside						
Construct SRE / maintenance seasonal facility	-	-	-	-	Construct	-
Construct electric aircraft support equipment	Construct	Construct	-	-	-	-
East Ramp Development	On-going pending leasing					
North Ramp Development	On-going pending leasing					
Airspace Enhancements						
Proposed RPZ Easements Phase I	-	-	-	Design /Acquire	Design /Acquire	Design /Acquire
Proposed RPZ Easements Phase II	-	-	-	Design/ Acquire	Design/ Acquire	Design/ Acquire

3.5 Summary of Impacts of Proposed Action

Table 3.5-1 Land Impacts of Proposed Actions

Project	Temporary Disturbance to grassed areas	Existing Vegetated to Impervious	Removal of Existing Impervious	Net Increase in Impervious	Impacts to Wetland Resource Areas
Reconstruct and Realign Taxiways D and E / Remove Taxiway D/E and the existing runup pit, new run up ramp	12.75 ac	7.23 ac	3.45 ac	3.78 ac	12,700 sf LUW 4,600 sf BVW 300 lf Bank
Extend Runway 15-33	42.63 ac	3.25 ac	0	3.25 ac	0
Relocate and Extend Taxiway B	12.22 ac	7.58 ac	2.39 ac	5.2 ac	0
Extend Taxiway A (including new Taxiway A and A4)	included in RW extension #s	1.69 ac	0	1.69 ac	0
Construct SRE / maintenance seasonal facility	0	0	0	0	0
Construct electric aircraft support equipment	0	0	0	0	0

Table 3.5-1 Land Impacts of Proposed Actions (Continued)

Project	Temporary Disturbance to grassed areas	Existing Vegetated to Impervious	Removal of Existing Impervious	Net Increase in Impervious	Impacts to Wetland Resource Areas
East Ramp Development	Included in TWY B #'s	17.3 ac	0	17.3 ac	0
North Ramp Development	0	9.1 ac	0.81 ac	8.25 ac	0
Runway Extension RPZ Easements	0	0	0	0	0
RPZ Easements for existing conditions	0	0	0	0	0
Acquire the existing Runway 33 RSA and ROFA properties on a willing seller basis.	0	0	0	0	0
Enhance Airport control over RPZ properties for all runway ends in easement or fee on a willing seller basis.	0	0	0	0	0
Total	**67.6 ac**	**46.15 ac**	**6.65 ac**	**39.47 ac**	**12,700 sf LUW 4,600 sf BVW 300 lf Bank**

Chapter 4.0

Alternatives Analysis

4.0 ALTERNATIVES ANALYSIS

This chapter provides information on alternatives identified for evaluation in this EA/EIR consistent with the purpose and need for the proposed Projects. As required by the Council on Environmental Quality (CEQ) regulations (Title 40 Code of Federal Regulations [C.F.R.] section 1502.14), and MEPA Regulations. During the Master Plan development, the alternatives were initially screened based on the ability of the proposed Projects (and alternatives) to meet the following purpose and need screening criteria:

- Accommodate forecasted aviation demand and satisfy the corresponding facility requirements,
- Meet applicable FAA design and airfield geometry standards, and
- Provide methods to meet local constraints and address community concerns.

The Master Plan analyzed alternatives against Level 1 screening criteria (infrastructure constraints) and Level 2 screening criteria (FAA standards and facility requirements). In addition to the Master Plan screening criteria described above, this EA/EIR evaluates additional alternatives based on preliminary design concepts used to identify environmental impacts community impacts, and estimated cost.

The following alternatives analysis presents considered alternatives in comparative form based on the information and analysis presented in Chapter 5.0, Affected Environment and Chapter 6.0, Environmental Consequences. Consistent with this goal, the following analysis on alternatives considers what effect changing the parameters of a project, or components, will have on the environment. The following information is provided within this alternatives analysis:

- The Proposed Action,
- Reasonable alternatives to the Proposed Action, including alternatives that the agency eliminated from detailed study and reasons for their elimination,
- Information on the No- Action (i.e., No-Build) Alternative, and
- Preferred alternative or alternatives, if one or more exists.

FAA Order 5050.4B, paragraph 706 (d)(7), notes that when an alternative is considered but judged "not reasonable," the EA should concisely explain why the sponsor or FAA eliminated the alternative from further consideration. Environmental impacts, avoidance, minimization, and mitigation measures for the proposed Projects are briefly described in this chapter and expounded upon in Chapter 5.0 – Affected Environment and Chapter 6.0 – Environmental Consequences.

As part of the alternatives analysis, a "No-Build Alternative" is considered for each proposed Project. The No-Build Alternative leaves existing conditions unchanged. No improvements would be made. The No Build Alternative serves as the baseline to which the other alternatives are compared. A No-Build scenario assumes preventive or routine maintenance activities on existing infrastructure and considers other ongoing Airport-sponsored projects.

Project locations are shown in **Figure 1.1-3** and the alternatives are individually shown in **Figures 4.1-1 through 4.1-9**. Details on impacts to resources from impervious surfaces and grading within the Airport are listed in **Table 4.1-5**.

4.1 Airside Alternatives

Airside alternatives include projects directly related to the arrival and departure of aircraft, primarily runways and taxiways and associated safety areas. Airside alternatives are provided to identify potential solutions to non-standard FAA geometry or design conditions as identified in the Airport Master Plan.

As noted in the Master Plan, a variety of aircraft types, both large and small, using the Airport have different runway requirements. The Master Plan's Airfield Capacity analysis provides factors relative to runway length that are used to determine aircraft performance and the runway requirements that must be met for an aircraft to use a particular runway. Additional review of alternatives has been conducted as part of environmental review, and as appropriate, alternatives that reduce and minimize impacts, primarily community and environmental impacts, over the Master Plan recommendation are discussed below.

FAA Advisory Circular 150/5300-13B, Airport Design contains Airport design standards that provide guidelines for a safe, efficient, and economic airport system. The Master Plan undertook a review of the design standards to ensure safety and efficiency of current and future Airport users, and to identify the basic aircraft characteristics which the Airport design will need to meet. Airport design parameters that are based only on the existing aircraft can limit the Airport's ability to expand and meet future safety requirements for aircraft anticipated to use the airport in the future due to factors such as fleet changes over time. As discussed in Section 2.2.1.4, determination of the design critical aircraft is an important aspect of airport planning and design as it sets dimensional requirements on an airport, such as the separation distance between taxiways and runways, and the size of certain areas protecting the safety of aircraft operations and passengers. The critical aircraft determination, identified in the Master Plan, ensures proper development of airport facilities. It also matches aircraft operational area dimensions to the most demanding aircraft that regularly use the runways, taxiways, and apron areas.

The critical aircraft is defined as "the most demanding aircraft type or grouping of aircraft (family of aircraft) with similar characteristics, which make regular use of the airport." Regular use is 500 annual operations, including both itinerant and local operations but excluding touch-and-go operations. An operation is either a takeoff or landing. The existing and proposed design aircraft should be reviewed on an individual basis per **FAA AC 150/5325-4B *Runway Length Requirements for Airport Design***. The existing commercial and GA design aircraft are the Embraer 190 (E190) and Gulfstream V/ Gulfstream G500 (G500), respectively; The future commercial design aircraft for the Airport is the Airbus 220 (A220). However, the runway length analysis looked at the family of aircraft using the facility now and proposed to use the facility in the future.

The Master Plan utilized a screening process to analyze alternatives created to address aircraft operational requirements and FAA design and geometry standards (as identified in FAA Advisory Circular (AC) 150/5300-13B).

4.1.1 Runway 15-33 Extension

Runway 15-33 is currently 5,255 feet long and 150 feet wide and is the primary Instrument Flight Rules (IFR) runway at the Airport. The existing critical design aircraft for Runway 15-33 are the Airbus A220-300 and Gulfstream V/G500. Alternatives to meet the Master Plan's requirements relative to runway length are identified below. These alternatives are limited by the need for the Runway 15 Runway Safety Area (RSA) to remain on Airport property as well as to keep Runway 33 RSA in its existing location.

As discussed above, and in *Chapter 2.0, Purpose and Need*, additional runway length is needed at the Airport to meet the requirements of the critical aircraft to enhance safety and efficiency of operations. Airport design and safety guidelines to meet runway length recommendation are detailed in FAA **AC 150/5325-4B**, ***Runway Length Requirements for Airport Design***, and are discussed for each runway alternative. Because Runway 15-33 is the IFR runway at the Airport, it was selected for extension. However, an evaluation of the extension alternatives of Runway 6-24 was completed as part of the Master Plan (see **Appendix B**) and is also discussed summarized in Alternative 5 below. This alternative was eliminated from further evaluation during Master Plan alternatives screening.

Additionally, an evaluation of the use of Joint Base Cape Cod (JBCC) as a public-use airport was considered as Runway 15-33 Alternative 6 (see Section 4.1.1.8). Prior MEPA analysis provided a rational decision on this alternative, concluding that the use of JBCC as a public-use airport is not a feasible alternative for several reasons (see EEA 12267, ENF Certificate, September 2000). Most importantly, the use of JBCC would merely shift environmental impacts of this project to another community and that the property itself is owned by the Commonwealth of Massachusetts and leased by the Federal Government, and hosts five different military commands, compounding jurisdictional issues.

4.1.1.1 Runway 15-33 Alternative 1 – No-Build Alternative

The No-Build Alternative (see **Figure 1.1-1**) keeps the runway length of Runway 15-33 at its current length of 5,255 feet. The No-Build Alternative was dismissed because it does not meet the existing and future requirements and purpose and needs related to runway length for the identified families of aircraft.

4.1.1.2 Runway 15-33 Alternative 2 – 1,295-foot extension to Runway 15 end and 400-foot extension to Runway 33 end

This alternative proposes extending Runway 15-33 to meet the runway length recommendation presented in the Master Plan (see **Figure 4.1-1**). This alternative includes a 1,295-foot extension to the Runway 15 end and a 400-foot extension to the Runway 33 end for a total length of 7,281 feet.

The Runway 33 extension would include a displaced threshold with the Runway 33 landing threshold remaining in its current location. Taxiway A would be extended, and new connectors (Taxiway A1 and Taxiway A4) constructed to align with the new Runway 15 end at 90-degree angles. All areas within the taxiway object free areas (TOFAs) and the relocated perimeter road located off Airport property would be acquired when the land becomes available on a willing seller basis.

McFarland Johnson

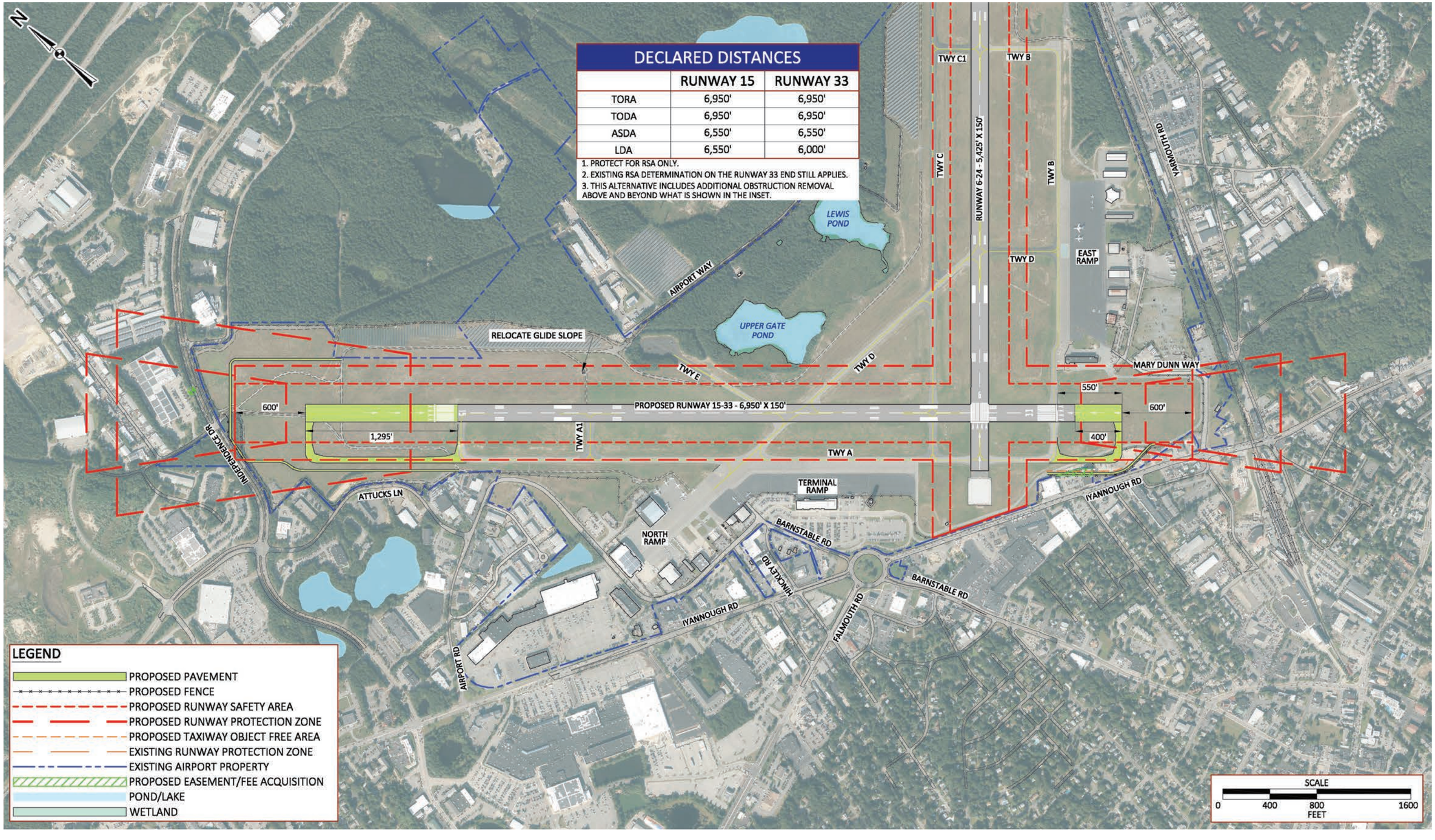


Figure 4.1-1

Runway 15-33 Alternative 2: 1,295-foot Extension to RW 15 End and 400-foot Extension to RW 33 End (Master Plan Preferred Alternative)

Alternative 2 meets the requirement for a runway length of 6,000 feet for both accelerated stop distance available (ASDA) and landing distance available (LDA) in both directions of Runway 15 and 33. Moving the Runway 15 landing threshold (i.e., removing the displacement to the threshold) would require additional obstruction removal and would result in incompatible land uses since the runway extension moves the RPZs further out and over Victory Chapel. A house of worship within an RPZ is an incompatible land use. Obstruction removal that would be required for this alternative would result in difficulties and high costs for construction challenging. The obstructions include above utilities poles that would require re-location along Independence Drive as well as other man-made structures and natural obstructions.

4.1.1.3 Runway 15-33 Alternative 3 – 1,258-foot extension to the Runway 15 end and a 400-foot extension to the Runway 33 end (with increased displaced thresholds)

Alternative 3 (see **Figure 4.1-2**) proposes a 1,258-foot extension to the Runway 15 end and a 400-foot extension to the Runway 33 end for a total length of 7,181 feet. This alternative includes a 1,058-foot displaced landing threshold on the Runway 15 end and a 550-foot displaced threshold on the Runway 33 end. In this alternative, Taxiway A would extend to the new runway ends and connect to the runway at a 90-degree angle at each end. All areas within the TOFAs and the relocated perimeter road located off Airport property would be acquired when the land becomes available on a willing seller basis.

Runway 15-33 Alternative 3 results in reduced obstruction impacts and provides greater land use compatibility compared to Runway 15-33 Alternative 2. This alternative does not meet the Runway 15 recommended LDA of 6,000 feet; however, it improves the Runway 15 LDA by 200 feet compared to existing conditions. It also requires the acquisition of additional off Airport property.

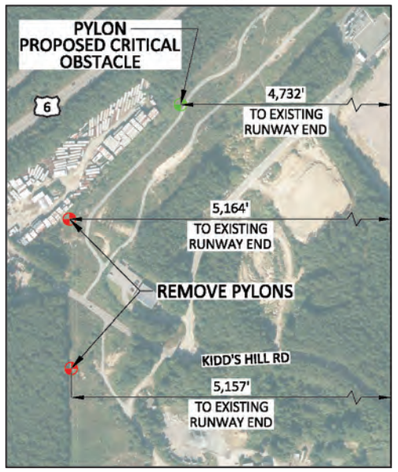
4.1.1.4 Runway 15-33 Alternative 4 – 895-foot extension to the Runway 15 end and a 400-foot extension to the Runway 33 end (6,550 feet)

Alternative 4 (see **Figure 4.1-3**) proposes an 895-foot extension to the Runway 15 end and a 400-foot extension to the Runway 33 end for a total length of 6,550 feet. This alternative includes a 695-foot displaced threshold on the Runway 15 end and a 550-foot displaced threshold on the Runway 33 end. Taxiway A would be extended to the new runway ends and connect to the Runway 15 and 33 ends at 90-degree angles. All areas within the TOFAs and relocated perimeter road located off Airport property would be acquired when the land becomes available on a willing seller basis. Compared to Alternatives 2 and 3, Alternative 4 results in fewer obstruction impacts to Runway 15-33. This alternative improves Runway 15 LDA by 200 feet compared to existing conditions to 5,855 feet.

Runway 15-33 Alternative 4 provides a runway length balanced in terms of enhancing safety and operations and minimizing impacts to the community. The additional runway length that is proposed in Runway 15-33 Alternative 3 only aids take-offs and does not help bring the Airport closer to meeting the facility requirements for LDA due to the presence of obstructions on the Runway 15 approach. Runway 15-33 Alternative 4 removes excess pavement and focuses on the key pavement necessary to meet the facility requirements, where possible.

McFarland Johnson

SCALE : 1" = 600'



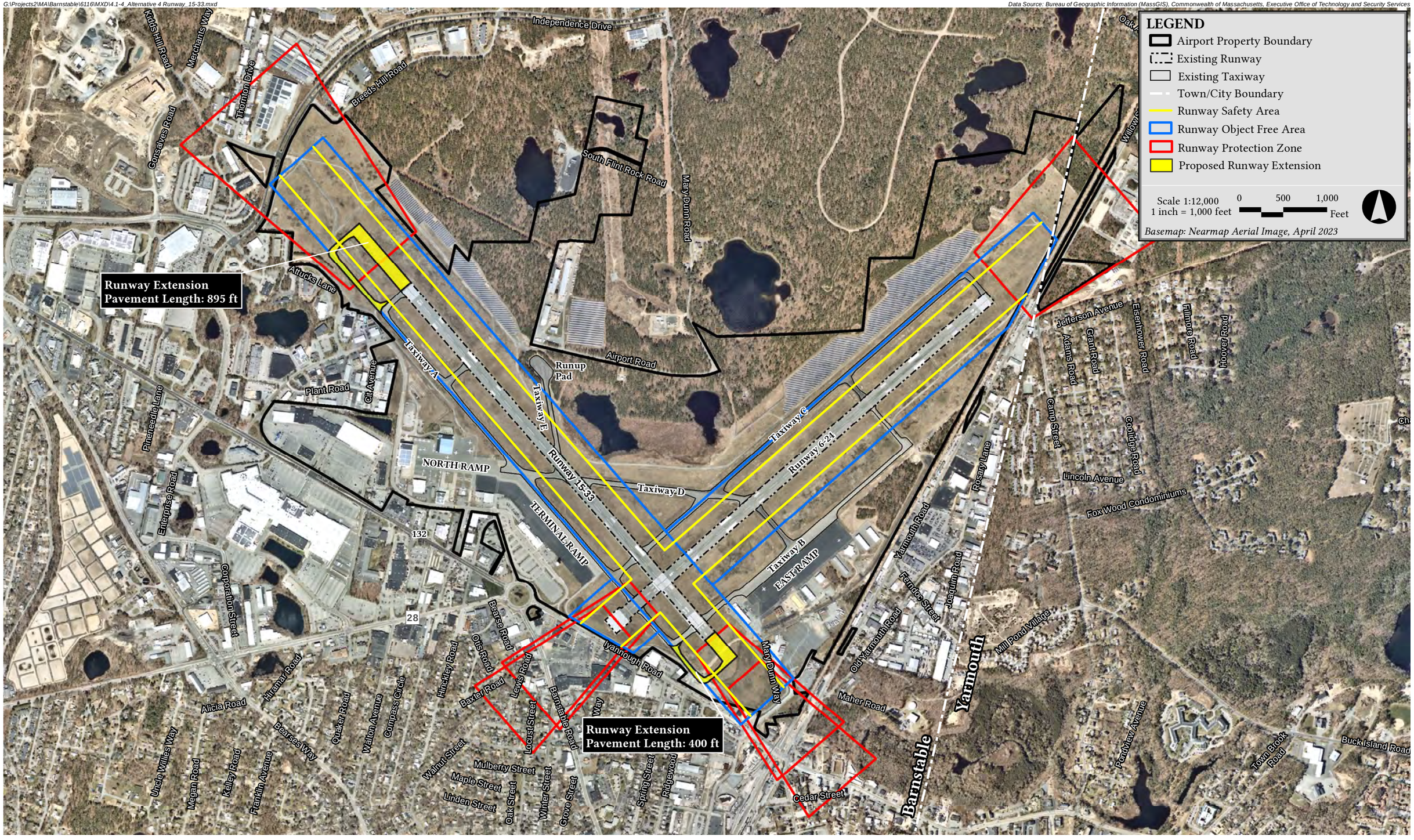
DECLARED DISTANCES		
	RUNWAY 15	RUNWAY 33
TORA	6,913'	6,913'
TODA	6,913'	6,913'
ASDA	6,513'	6,550'
LDA	5,455'	6,000'

1. PROTECT FOR RSA ONLY.
2. EXISTING RSA DETERMINATION ON THE RUNWAY 33 END STILL APPLIES.
3. THIS ALTERNATIVE INCLUDES ADDITIONAL OBSTRUCTION REMOVAL ABOVE AND BEYOND WHAT IS SHOWN IN THE INSET.

Figure 4.1-2
Alternative 3: 1,258-foot Extension to RW 15 end and 400-foot Extension to RW 33 end

G:\Projects2\MA\Barnstable\611\MXD\4.1-4_Alternative 4 Runway_15-33.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Cape Cod Gateway Airport Barnstable, Massachusetts

Figure 4.1-3

Runway 15-33 Alternative 4: 895-foot Extension to RW 15 End and 400-foot Extension to RW 33 End

4.1.1.5 Runway 15-33 Alternative 4A – 801-foot extension to the Runway 15 end only (total runway length of 6,054 feet)

Alternative 4A (see **Figure 4.1-4**) proposes an 801-foot extension only to the Runway 15 end for a total runway length of 6,055 feet. This alternative includes a 695-foot displaced threshold on the Runway 15 end. Taxiway A would be extended to the new runway end and connect to Runway 15 at a 90-degree angle.

This alternative meets the runway length needs of the critical aircraft for takeoff on both runways, while also providing a balanced approach to limiting and avoiding off Airport impacts to surrounding communities. This alternative results in the following:

- Additional reduced obstruction impacts over Runway 15-33 Alternatives 2, 3, 4, and 5.
- Less impervious surfaces compared to other alternatives.
- Minimizes costs and off Airport property needed to be acquired to extend Taxiway A to the ends of the extended Runway 33 end compared to other alternatives that include an extension to the Runway 33 end.
- As with other alternatives, Runway 15-33 Alternative 4A provides a runway length balanced in terms of enhancing safety and operations and minimizing impacts.
- The additional runway length that is proposed in Runway 15-33 Alternative 4A meets TORA recommendations for critical aircraft and does not meet the facility requirements for landing needs for Runway 15/33.
- Minimizes increases in new pavement and focuses on the key pavement necessary to meet the runway length needs of the critical aircraft identified in the facility requirements.

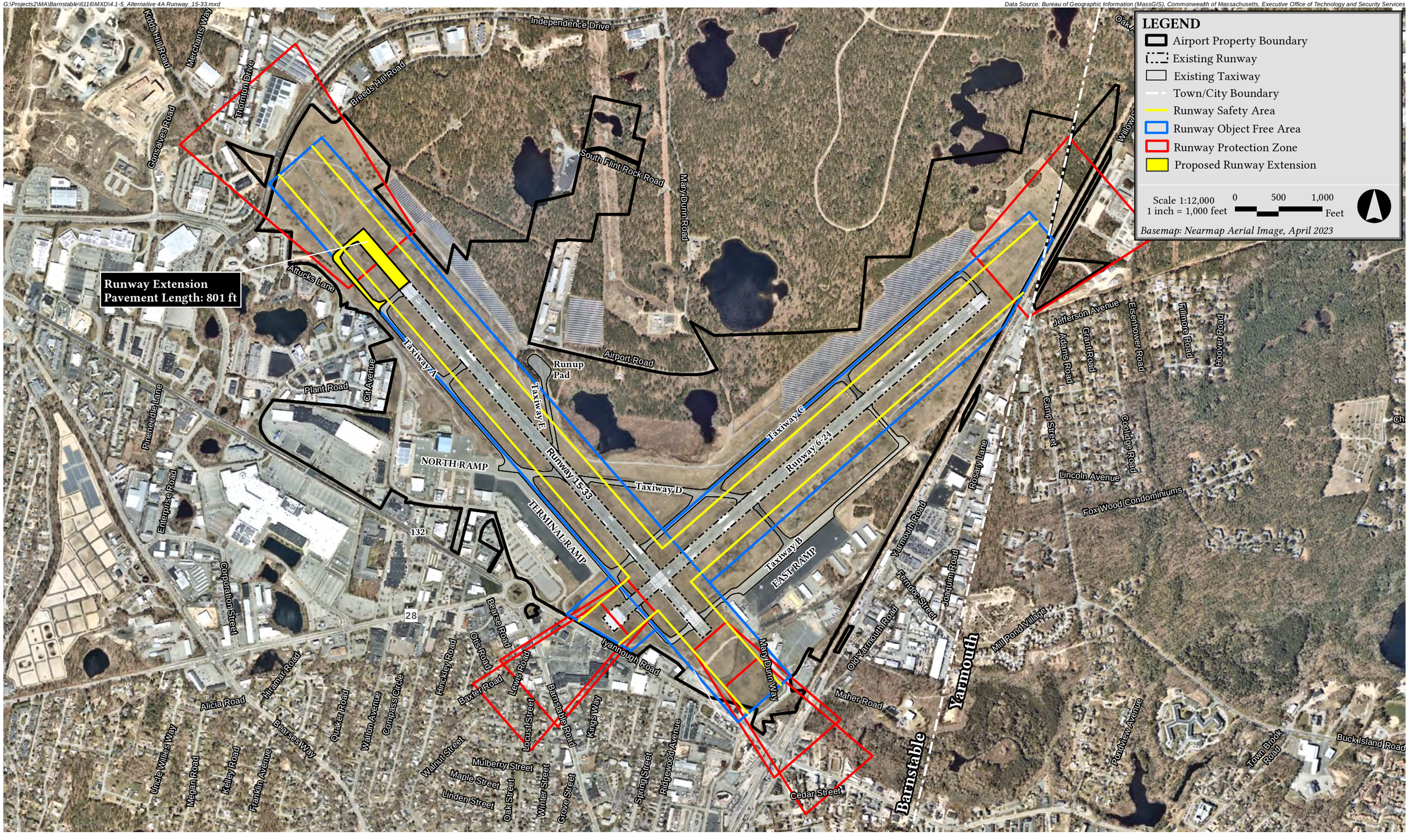
4.1.1.6 Runway 15-33 Alternative 4B – 895-foot extension to the Runway 15 end only (total runway length of 6,148 feet) – Preferred Alternative

After the additional analysis described in Section 2.2.1 was completed, Alternative 4B was selected as the Preferred Alternative as it meets the purpose and need of the runway length recommendation. Alternative 4B (see **Figure 4.1-5**) proposes an 895-foot extension only to the Runway 15 end for a total runway length of 6,150 feet. This alternative includes a 695-foot displaced threshold on the Runway 15 end resulting in a TORA of 6,150 feet and an LDA of 5,455 feet. Runway 33 TORA would increase to 6,150 feet also, and more importantly, LDA increases to 6,000 feet. This provides the Airport with a runway that meets the LDA for the critical aircraft. Taxiway A would be extended to the new runway end and connect to Runway 15 at a 90-degree angle.

- Runway 15-33 Alternative 4B results in reduced airspace obstruction impacts over Runway 15-33 Alternatives 2, 3, and 5.
- This alternative also reduces the amount of impervious surface compared to other alternatives.
- Compared to alternatives that include extension to the Runway 33 end, this alternative minimizes costs and impacts associated with off Airport property needed to be acquired for the construction of the Taxiway A extension to the ends of the extended Runway 33 end.

G:\Projects2\MA\Barnstable\6116\MXD\4.1-5_Alternative 4A Runway_15-33.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

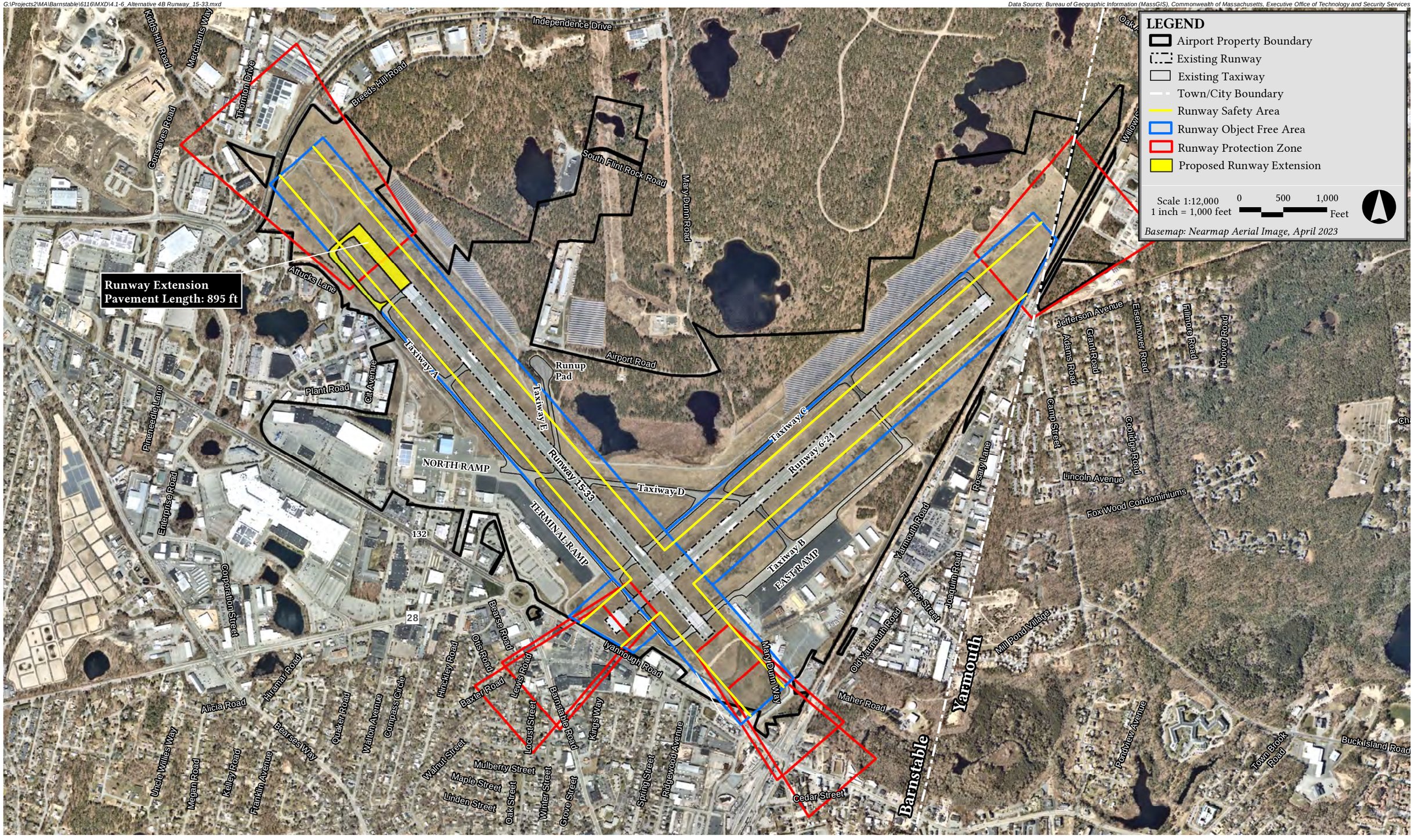


Cape Cod Gateway Airport **Barnstable, Massachusetts**

Figure 4.1-4
Alternative 4A Runway 15-33: 801-Foot Extension to RW 15 End

G:\Projects2\MA\Barnstable\6116\MXD\4.1-6_Alternative 4B Runway_15-33.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Cape Cod Gateway Airport Barnstable, Massachusetts

Figure 4.1-5

Alternative 4B Runway 15-33: 895-Foot Extension to RW 15 End

- As with other alternatives, Runway 15-33 Alternative 4B provides a runway length balanced in terms of enhancing safety and operations, meeting the runway length recommendation identified in the 2022 Master Plan, while minimizing community impacts.
- Runway 15-33 Alternative 4B minimizes an increase in new pavement and land disturbance and focuses on adding the minimum pavement necessary to meet the facility requirements for both take-offs and landings on at least one runway (Runway 33).

4.1.1.7 Runway 15-33 Alternative 5 – Extend Runway 6-24

This alternative would extend both ends of Runway 6-24 to meet the desired Master Plan runway length of 6,550 feet. Both ends of Runway 6-24 are constrained by the Airport property limits and adjacent land uses. An extension to the Runway 24-end would require the relocation of Yarmouth Road, railroad tracks, existing EMAS, and Iyannough Road Rotary. An extension to the Runway 6-end would also require the acquisition of residential properties. This alternative was dismissed due to the immediate vicinity community impacts.

4.1.1.8 Runway 15-33 Alternative 6 – Closure of Cape Gateway Airport and Operational Shift to Joint Base Cape Cod

This alternative proposes the closure of the Airport in its entirety and operational shifts to JBCC (see **Figure 4.1-6**). JBCC is a joint-use base home to five military commands, a 22,000-acre tract of land in Bourne, Sandwich, Falmouth, and Mashpee between Route 28 and Route 6. The Otis Air National Guard base controls approximately 3,830 acres in the southeast corner of JBCC. The rest of the property is divided between the Army National Guard (14,500 acres), the Coast Guard (1,407 acres), other federal agencies (1,100 acres), and the Veteran's Administration (750 acres).

The Massachusetts General Court created the military installation in 1935 authorizing the acquisition of 12,600 acres in Bourne, Sandwich, Falmouth, and Mashpee, establishing a campsite for the use and training of military forces of the Commonwealth. Since then, the reservation was enlarged by converting part of the Shawme-Crowell State Forest to military use. Currently, the Army, Air Force, and Coast Guard all lease land on the JBCC. The land, owned by the Commonwealth, is leased to the Federal government, and licensed back to the Commonwealth for National Guard purposes.

The JBCC airfield is located in the southeast corner of the base. Aviation facilities include two runways and numerous aprons and taxiways around the airfield. The main runway runs NW/SE and is approximately 9,500 feet long. The second runway runs NE/SW and is approximately 8,000 feet long. The Air National Guard and US Coast Guard operate workshops and maintenance facilities around the airfield. Army National Guard helicopter/ aviation facilities, fire station and the existing air traffic control tower and FAA building are also in this area. Areas surrounding the runways provide habitat for protected species of grassland birds. Runway conditions are such that reconstruction would be required for conversion to a public use airport as well as review and approval by FAA for Part 150 Certification as a commercial-use airport.

G:\Alyssa\Alt6_JointBase_CapeCod_20231012.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Cape Cod Gateway Airport Barnstable, Massachusetts

Figure 4.1-6
Alternative 6 Joint Base Cape Cod

The 5,000-acre JBCC consists of developed land, including runways and supporting facilities, and disturbed native grassland. The native grassland surrounding the runways at JBCC is habitat for several rare bird species monitored by the Army National Guard, Environmental Protection Office, and the NHESP. Other terrain at JBCC includes mixed hardwood and conifer woods on the northern edge, immature pine forests scattered throughout the base, and pitch pine scrub oak forest on the south and western edges of the base. JBCC is located over the Sagamore groundwater lens, a portion of the Cape Cod sole source aquifer. There is one water supply well (Well J), and there are two CCC Identified Wellhead Protection Areas in the northern and southern portions of the base. Identified Wellhead Protection Areas, as defined by the CCC Regional Policy Plan, are those areas that contribute groundwater to existing public and private water supply wells. These areas are recognized by the CCC as equivalent to DEP-approved Zone II's. Also present on the base are identified freshwater recharge areas to Ashumet Pond and Johns Pond, extending across the southeast corner. Past activities by various military organizations utilizing JBCC property have resulted in the contamination of soil and groundwater in several locations.

The relocation of Cape Cod Gateway Airport functions to JBCC is not a viable alternative. The Cape Cod Gateway Airport Commission is an agency of the Town of Barnstable, entrusted with the management of the Airport, a public facility of the Town of Barnstable. M.G.L Chapter 90 creates the legal framework to empower the Airport Commission as the responsible entity for the "custody, care and management of the municipal airport of said city or town." The statues within M.G.L Chapter 90 are instrumental in creating a governance structure for municipal airports to ensure their control is secure from influence that would detract from their mission as a public-use transportation asset to the flying public, and to guide its operation and future development.

For the Commission to address an alternative outside municipal borders is inconsistent with both its powers and its obligations. The Commission has no current rights to operate outside Barnstable Municipal limits. The alternatives under consideration are limited to Airport property, or, in the case of improved access, to changes to be made within Barnstable with the cooperation and consent of the Barnstable Town Council.

JBCC is the property of the Commonwealth of Massachusetts and is leased by the Federal Government under the Department of the Air Force. As stated above, the Proponent has no authority to plan for the use of that property. In Massachusetts, the only state entity which is constituted to own and operate airports is the Massachusetts Port Authority (Massport). Massport has no statutory authorization to develop or operate an airport at JBCC. Such an undertaking would necessitate significant state commitments of funds, a programmatic expansion of Massport powers and responsibilities, and a major change in state transportation structures and policies and could only be undertaken as directed by the Massachusetts legislature. Any suggestion that a public airport be established at JBCC can only be addressed by the legislature, and only if a majority of the legislature so directs such an alternative be able to be considered.

For Airport functions to be relocated to JBCC, a major change in land use for Falmouth would be required. Activities at JBCC have in the past been a subject of considerable controversy (the PAVE PAWS radar system in the 1970s, open burning in the 1980s, and groundwater contamination in the 1990s), and it seems reasonable to anticipate that the proposal of the Town of Barnstable to shift

Airport operations might not be positively received. Should the Commonwealth, led by the legislative delegation, undertake a significant campaign to create a major public-use regional airport at JBCC, then (and only then) should further investigation of this alternative be required.

The CCGA is the only full-service airport with a precision runway most proximate to Nantucket. Air travel from the Airport to Nantucket is closer, hence less costly, than from other airports, including JBCC. Nantucket residents rely heavily on access to the Airport for their access to mainland Massachusetts. Hundreds of residents of Barnstable and other mid-Cape communities use the Airport to commute to Nantucket for work, and thus their livelihoods depend on a functioning Airport (the ferry is not an alternative, owing to the duration of the trip and weather dependency). Conversely, Nantucket businesses and services rely on a mainland workforce that is simply not available in the employment market on Nantucket proper.

CCGA also supports emergency response. For individuals on Cape Cod and the islands of Nantucket and Martha's Vineyard seeking emergency medical assistance, the Airport provides efficient access to the Cape Cod Hospital. The Airport also hosts Boston Med Flights and supports military operations, such as the U.S. Coast Guard's sea search and rescue missions, which are part of its role in providing emergency response and ensuring public safety on Cape Cod and the islands. These benefits are not transferable to JBCC due to the less central location and longer distance from Cape Cod Hospital. JBCC is over 20 miles away from Cape Cod Hospital and over 40 minutes away whereas Cape Cod Gateway Airport is approximately one mile, less than 10 minutes, from Cape Cod Hospital.[1] Several local newspaper articles have attributed the proximity of CCGA to Cape Cod Hospital as an important contribution to positive outcomes in situations where Cape residents needed emergency medical care.

Moreover, according to the 2019 MassDOT Aeronautics study titled "The Economic Impact of Public-use Airports in Massachusetts," the Airport has the second largest economic output of all Massachusetts airports (exclusive of Massport facilities) and provides economic benefits of approximately $157.2 million annually to the local economy. Businesses dependent on the Airport employ approximately 1,725 workers and commit approximately $73.8 million dollars to payroll annually. To shut down the Airport entirely, or to channel all future growth to a JBCC alternative, is anticipated to adversely impact the entire economy of the mid-Cape. Furthermore, significant financial impacts would be experienced by the CCGA's numerous tenants (leaseholders), their facilities and infrastructure, and the taxes they pay to the town. Not all tenants would be willing to relocate their businesses and if they did, a substantial investment in new structures would be required. These significant adverse economic impacts deem this alternative infeasible.

As one of nine Enterprise Funds of the Town of Barnstable, the Airport makes an annual profit and requires no financial support from the Town of Barnstable. The Airport has received approximately $87 million in state and federal funding for airport purposes since 1982. Grant conditions require that the improvements thus funded be used for aviation purposes. A closure of the Airport could require

[1] *Boston MedFlight provides a critical airborne Island lifeline* https://www.mvtimes.com/2016/08/03/boston-medflight-provides-critical-airborne-island-lifeline/

the Town of Barnstable to reimburse the United States and the Commonwealth for these past expenditures of airport grant funding received, which could have significant negative economic impacts to the Town of Barnstable and its residents.

For all the above reasons, this alternative was dismissed for further consideration in this environmental assessment.

Table 4.1-1 Runway 15-33 Extension Alternatives (FAA AC 150/5325-4B, Runway Length Requirements for Airport Design)

	Meets FAA Recommendations for LDA and TODA of 6,000 feet	Community Impacts	Env. Impacts (Land Alteration, Stormwater)	Easement Acquisition	Cost	Notes
Alterative 1 (No Build Alternative) Maintain current length of 5,255 ft	No	None	None	Yes.	★★☆	Does not meet existing and future facility requirements.
Alternative 2 Extend Runway 15 end by 1,295 ft, Extend Runway 33 end by 400 ft. Total Length 6,950 ft	Yes. the LDA is 6,500' for the Runway 15 and 6,000' for Runway 33. TODA is 6,950' for both RW15 and RW33	★★★	★★★	Yes.	★★★	Extensive obstruction removal required. Incompatible land uses within RPZ. Requires relocation of roadways. Cost and offsite impacts resulted in the dismissal of this alternative.
Alternative 3 Extend Runway 15 end by 1,258 ft, Extend Runway 33 end by 400 ft. Total Length 6,913 ft	Yes, but not for LDA of RW 15. The LDA is 5,455' for the Runway 15 and 6,000' for Runway 33. TODA is 6,913' for both RW15 and RW33	★★★	★★★	Yes.	★★★	Moderate obstruction removal. Requires relocation of roadways. Cost and offsite impacts resulted in the dismissal of this alternative.
Alternative 4 Extend Runway 15 end by 895 ft. Extend Runway 33 end by 400 ft. Total Length 6,550 ft	Yes, but not for LDA of RW 15. The LDA is 5,455' for the Runway 15 and 6,000' for Runway 33. TODA is 6,550' for both RW15 and RW33	★★☆	★★☆	Yes.	★★☆	Land acquisition needed for TW A extension. Balances community impacts with longer extension on 15 end
Alternative 4A Extend Runway 15 end by 801 ft. Total Length 6,056 ft	No. The LDA is 5,361' for RW 15 and 5,906 for RW 33. The TODA is 6,056' for RW 15 and RW 33.	★☆☆	★☆☆	Yes.	★☆☆	Meets takeoff requirements. Reduces community impacts further by only extending one runway end.
Alternative 4B (Preferred Alternative) Extend Runway 15 end by 895 ft. Total Length 6,148 ft	Yes, but not for LDA of RW 15. LDA is 5,455 for RW 15 and 6,000' for RW33. The TODA is 6,150' for RW 15 and RW 33.	★☆☆	★☆☆	Yes.	★☆☆	Runway 33 meets LDA requirements for critical aircraft. Meets takeoff requirements. Reduces community impacts further by only extending one runway end.

Table 4.1-1 Runway 15-33 Extension Alternatives (FAA AC 150/5325-4B, Runway Length Requirements for Airport Design) (Continued)

	Meets FAA Recommendations for LDA and TODA of 6,000 feet	Community Impacts	Env. Impacts (Land Alteration, Stormwater)	Easement Acquisition	Cost	Notes
Alternative 5 Extend Runway 6-24 to meet runway length of 6,550 feet	Yes.	★★★	★★★	Yes.	★★★	Requires relocation of infrastructure, acquisition of residential and commercial properties
Alternative 6 Close the Airport / shift to Joint Base Cape Cod (JBCC).	Presumed to be yes.	★★★	TBD	No.	★★★	Requires major change in land use Falmouth/Mashpee/Sandwich. Shifts impacts, does not reduce impacts., owned by state, leased by federal entities.

★★★ Large impact

★★☆ Moderate impact

★☆☆ Minimal impact

4.1.2 Taxiway Alternatives

FAA **AC 150/5300-13B, *Airport Design*** (2022-03-31) contains FAA standards and recommendations for the geometric layout and engineering design of runways, taxiways, aprons, and other facilities at civil airports. The Master Plan update reviewed the Airport's existing taxiway system with the design standards in AC 150/5300-13B to evaluate compliance with current standards for taxiway width, taxiway safety areas, TOFAs, taxiway shoulders, taxiway gradient, and for parallel taxiways, the distance between the runway and taxiway centerlines.

The term "taxiway standards" describes FAA standards and recommended practices for both taxiways and taxilanes. Some of the design standards for taxiways and taxilanes vary given the different aircraft speeds and uses of taxiways versus taxilanes. Taxiways typically reside in movement areas, while taxilanes are more common in non-movement areas such as terminal apron areas.

The dimensions for taxiways vary based on the identified Airplane Design Group (ADG) and taxiway design group (TDG) for each taxiway. The ADG is based on the wingspan and tail height of an aircraft, while the TDG is based on the distance between an aircraft's cockpit to main gear, as well as the width of the main gear. There are six ADG groups and seven TDG groups.

FAA provides airport design standards, recommended practices, and design considerations for taxiways and taxilanes. Specifically, these design standards provide guidance to enhance safety and efficiency for 1) Taxiway and taxilane dimensions, configuration, and separation standards, 2) Taxiway turns and intersection design, and 3) Surface gradients.

The following standards from FAA AC 150/5300-13B, *Airport Design*, are listed below and their applicability to the proposed Projects discussed.

Taxiway / Apron Geometry Taxiways connecting an apron directly to a runway ("direct connection") can lead to confusion by creating a false expectation of a parallel taxiway prior to a runway. This loss of situational awareness can result in a pilot entering a runway unknowingly, thus, resulting in a runway incursion.

- Taxiways leading from an apron to a runway should make at least one turn between 75 and 90 degrees prior to reaching the runway hold line.
- For existing conditions with direct access from an apron to a runway: Develop a plan (e.g., ALP) to meet the standard when it becomes practical to make such improvements, and reconfigure existing direct-access taxiways, including those not designated as hot spots, when the associated taxiway is subject to reconstruction.
- To the extent practicable, design taxi routes between the apron and runway ends to include a turn onto a parallel taxiway and a second turn onto a connecting taxiway leading to the runway.
- During taxiway rehabilitation projects, evaluate the feasibility of reconfiguring existing direct-access taxiways (even those not designated as hot spots).

- Evaluate whether an increase to the standard runway to taxiway separation is necessary to allow the critical aircraft to hold 90 degrees, plus or minus 15 degrees, to the runway centerline. Airport should consider providing a partial parallel taxiway if the existing runway does not have a parallel taxiway.

Taxiway Clearance Pilots need ample wingtip clearance due to the pilots' limited ability to see their aircraft's wingtips from the cockpit. Wingtip clearance values ensure an acceptable level of safety when one airplane on a parallel taxiway wanders off the taxiway centerline toward an airplane on the adjacent taxiways. The ADG of the critical aircraft determines the minimum separation distance between a taxiway/taxilane centerline and fixed or moveable objects.

Taxiway Safety Area (TSA) The TSA is a defined surface prepared to support the occasional passage of aircraft and ARFF equipment. The TSA width equals the maximum wingspan of the ADG. The TSA is free of objects, except for objects that need to be located in the TSA because of their function. The TSA is designed to be capable, under dry conditions, of supporting SRE, ARFF equipment, and the occasional passage of aircraft without causing structural damage to the aircraft.

The dimensions of the taxiway safety areas vary based on the identified ADG and TDG for each taxiway. The ADG is based on the wingspan and tail height of an aircraft, while the TDG is based on the distance between an aircraft's cockpit to main gear, as well as the width of the main gear. These ADG and TDG groups are utilized to determine applicable design standards for taxiways, see **Table 4.1-2.**

Table 4.1-2 Taxiway Design Standards for Safety Areas, Object Free Area, and Separation Areas

Design Standard[2]	ADG I	ADG II	ADG III	ADG IV	ADG V	ADG VI
Taxiway Safety Area (feet)	49	79	118	171	214	262
Taxiway Object Free Area (feet)	89	124	171	243	285	335
Runway/Taxiway Separation (feet)	225-400[1]	240-400[1]	400	400	400	500[1]

Source: FAA AC 150/5300-13B
1: Runway/Taxiway separation vary based on approach visibility minimums
2: Existing and future design aircraft are in the AAC-ADG C-III family of aircraft for airfield dimensional standards.

Taxiway Object Free Area (TOFA) The TOFA/TLOFA is an area adjacent to the TSA that is clear of objects not fixed-by function to provide vertical and horizontal wingtip clearance. Applying the taxiway/taxilane centerline to object separation values in **Table 4.1-3** to both sides of the centerline establishes the TOFA/TLOFA.

The FAA Airport Design Advisory Circular states the side safety areas, which extend 200 feet off each side edge of pavement into the grass should be: clear and graded and have no hazardous ruts, humps, depressions, or other surface variations; drained by grading or storm sewers to prevent water accumulation; capable under dry conditions of supporting snow removal equipment, aircraft rescue

firefighting equipment, and the occasional passage of aircraft without causing damage to the aircraft; and free of objects, except those required because of their function, greater than 3 inches above grade.

Table 4.1-3 Taxiway Design Group – Design Width Standards

Design Standard[1]	TDG 1A	TDG 1B	TDG 2A	TDG 2B	TDG 3	TDG 4	TDG 5	TDG 6
Taxiway Width (feet)	25	25	35	35	50	50	75	75
Taxiway Shoulder (feet)	10	10	15	15	20	20	30	30

Source: FAA AC 150/5300-13B
1: The future design aircraft (A220) for both runways is a TDG 3 aircraft

Parallel Taxiways A parallel taxiway eliminates using the runway for taxiing, thus increasing runway capacity, and protecting the runway under low visibility conditions. A dual parallel taxiway provides ATCs flexibility in staging aircraft for takeoff and in routing inbound and outbound (opposite direction) traffic.

Runway/Taxiway Intersections Right-angle taxiways provide the best visual perspective to a pilot approaching an intersection with the runway to observe aircraft in both the left and right directions. They also provide the optimum orientation of the runway holding position signs to maximize visibility for the pilot.

- Design right-angle intersections for runway/taxiway intersections, except where there is a need for acute angled exit taxiways, such as a high-speed exit.
- If a true 90-degree angle with the runway is not practicable, it is acceptable to adjust the angle such that the critical aircraft is ±15 degrees from a 90-degree angle when at the hold line.
- Limit runway crossings to the outer thirds of the runway, keeping the middle third (high-energy area) of the runway clear so a pilot can maneuver to avoid a potential collision.

4.1.2.1 Taxiway D

Taxiway D Alternatives include the No Build and two build alternatives to improve multiple existing non-standard geometry conditions (see **Table 4.1-4**). This section provides further details on the constructability, cost, and environmental impacts for each alternative identified.

Table 4.1-4 Taxiway D – Non-Standard Geometry/Design Conditions

Airfield Geometry / Design Standard	Description of Taxiway D Non-Standard Conditions
Taxiway Intersection Angle	Taxiway D crosses Runway 6-24 and Runway 15-33 at non- 90 degree angles. Taxiway design standards specify right-angle intersections for runway/taxiway intersections, except where there is a need for acute angled exit taxiways, such as a high-speed exit. Right angle intersections, both between taxiways and runways, allow pilots the best visibility to the left and right. A right angle at the end of a parallel taxiway is a clear indication of approaching a runway.

Table 4.1-4 Taxiway D – Non-Standard Geometry/Design Conditions (Continued)

Airfield Geometry / Design Standard	Description of Taxiway D Non-Standard Conditions
High Energy Intersections	Runway 15-33 at Taxiway D crosses at a high-energy segment of the runway. Runway crossings should be limited to the outer thirds of the runway, keeping the middle third (high-energy area) of the runway clear so a pilot can maneuver to avoid a potential collision.
Direct Access	Taxiway D provides direct access from the Airport's North Ramp to Runway 15-33. This airfield geometry is problematic because taxiways leading directly from an apron to a runway without requiring a turn can cause confusion when a pilot expects to encounter a parallel taxiway but instead accidentally enters a runway. Also, when exiting a ramp area, hold lines may approach quickly. Pilots may not observe them and cause a runway incursion.
Multiple Taxiways Crossing	Taxiway D crosses RWY 15-33 at the vicinity of Taxiway E crossing. Multiple taxiways crossing each other between the hold line and the runway could cause confusion, additional time on the runway, and wrong turns/loss of pilot situational awareness.

Alternatives identified below seek to resolve existing non-standard geometry outlined in **Table 4.1- 4** above as much as practicable. Design options for relocation and extension of Taxiway D are provided below.

4.1.2.1.1 Taxiway D Alternative 1 – No-Build

The No-Build Alternative leaves the current taxiway configuration serving Runway 15-33. In the No-Build Alternative, Taxiway D remains in its current location and does not address existing non-standard conditions with potential safety concerns, including a non-90 degree taxiway angle, high energy crossing, direct access, and multiple crossings. The No-Build Alternative does not meet the existing and future facility requirements related to taxiway geometry and safety enhancements and therefore was dismissed from further consideration.

4.1.2.1.2 Taxiway D Alternative 2 – Preferred Alternative

Taxiway D Alternative 2 **(Figure 2.2-1)** would construct a partial parallel taxiway east of Runway 15-33 with a 400-foot standard runway centerline to taxiway centerline separation. Alternative 2 would extend from the existing Taxiway A1 across existing Taxiway D and Runway 6-24 to the proposed relocated Taxiway B. The Preferred Alternative would also construct an engine run-up area along the north side of the proposed partial parallel taxiway D and adjacent to the existing Taxiway E run-up pit, which would be removed. A blast fence/wall would be constructed next to the proposed run-up pit both for blast and noise protection.

This alternative removes Taxiway D between existing Taxiway A across Runway 15-33 and up to the new partial parallel taxiway, consistent with the Project's purpose and need. The Preferred Alternative implements geometry changes to meet FAA taxiway design standards thereby enhancing safety for aircraft using the Airport.

This alternative proposes a partial parallel taxiway to Runway 15-33, preventing safety concerns of two-way taxiing (conflicts between arriving and departing aircraft) occurring in front of the terminal building. This alternative also addresses the following FAA airfield geometry and design standards:

- Direct access from apron areas to the runway.
- Taxiway and Runway at acute angles, and
- High energy crossing.

The proposed location for Taxiway D would result in impacts on wetland resources (Bordering Vegetated Wetlands (BVW), Bank, and Land Under Water (LUW)) associated with Upper Gate Pond. Design options for reducing wetland resource area impacts include conventional fill on the north side of the taxiway with steep side slopes to limit the extent of impacts and a concrete retaining wall to further limit the extent of impacts. Design alternatives relative to slide slope grading/construction investigation to limit the extent of impacts (see **Figures 4.1-7 to 4.1-9**) were considered and are discussed below.

Build Alternatives 2A, 2B, 2C, 2D – Construct Partial Parallel Taxiway D and Runup Pad

These alternatives **(Figures 2.2-1 and 4.1-7 through 4.1-9)** would construct a partial parallel taxiway east of Runway 15-33 with a 400-foot standard runway centerline to taxiway centerline separation, from the existing Taxiway A1 across existing Taxiway D and Runway 6-24 to the proposed relocated Taxiway B. Within design options for Alternative 2, the requisite dimensions for safety areas and object free areas, as required by FAA standards, are proposed. Impact to resource areas associated with Upper Gate Pond are summarized in **Table 4.1-5** below.

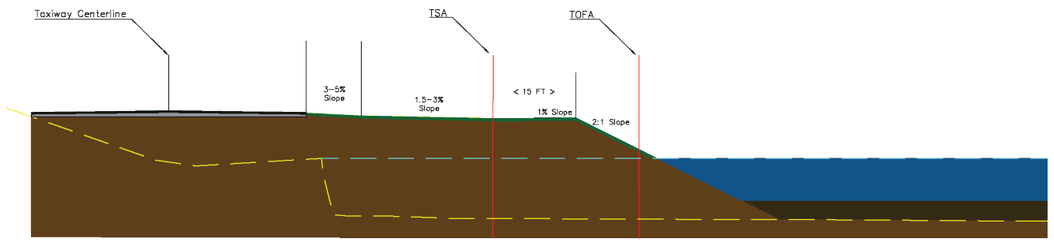
Table 4.1-5 Wetland Resource Area Impacts for Alternative 2 Options

Alternative	Resource Area Impacts		
	BVW (sf)	Bank (lf)	LUW (sf)
Alternative 2A – 4:1 Slope	11,790	540	27,980
Alternative 2B – 2:1 Slope	4,600	300	12,700
Alternative 2C – Retaining Wall	3,500	230	7,100
Alternative 2D - Bridge	0	100 (shadow)	10,000 (shadow)

- **Alternative 2A - Standard side slope**

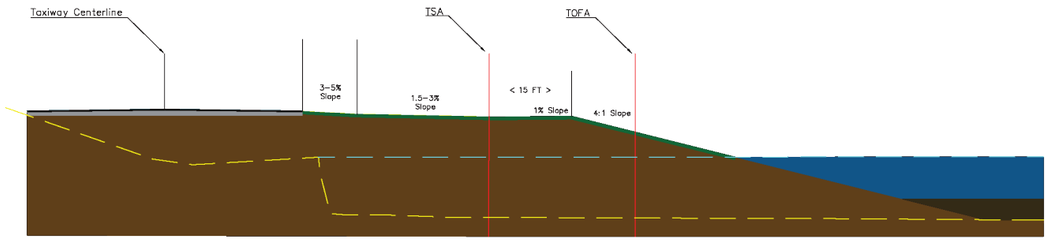
Taxiway D Alternative 2A proposes a parallel taxiway along the north side of Runway 15-33. This design alternative contains standard side slope aeras, Safety Areas, and TOFA for TDG 3/ADC III aircraft. This alternative for Taxiway D results in the largest impacts on BVW, Bank, and LUW associated with Upper Gate Pond due to fill on the north side of the taxiway (see **Figure 4.1-8**).

2:1 Slope



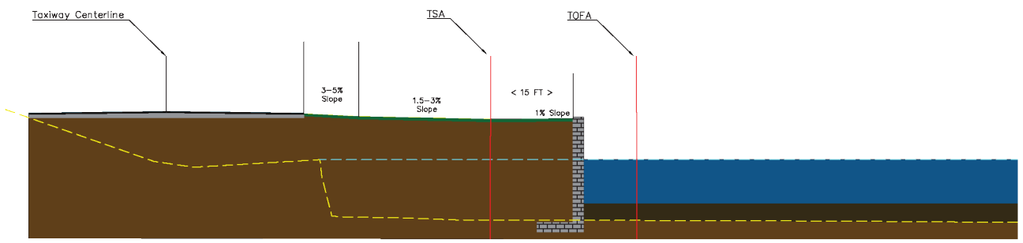
2:1 is increased slope grading within Taxiway OFA. To minimize impacts associated with Upper Gate Pond

4:1 Slope



4:1 is standard grading within Taxiway OFA

Retaining Wall



Alternative with the smallest impacts to Pond ($$$)

Figure 4.1-7
Side Slope Alternatives for Taxiway D

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Impact to 200-ft Buffer Zone
3.48 acres total
1.13 acres pavement

Impact to 100-ft Buffer Zone
1.75 acres total
0.52 acres pavement

AIRPORT ROAD

Upper Gate Pond

Proposed Runup Pad

Taxiway E

Existing Taxiway D

Proposed Taxiway D

Runway 15-33

Terminal Ramp

LEGEND

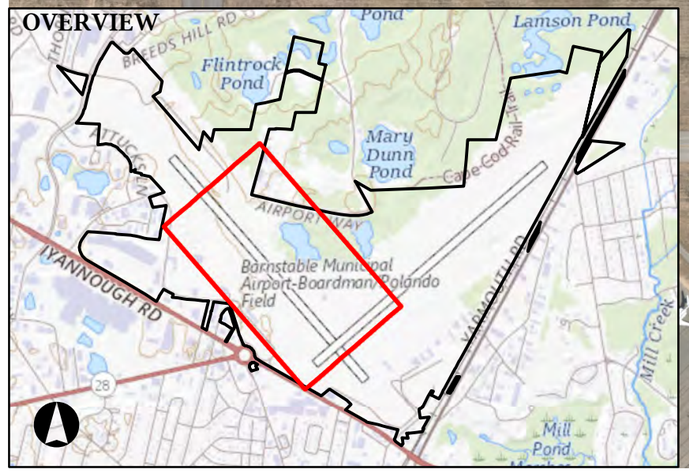
- Airport Property Boundary
- New Pavement
- Pavement to be Reconstructed
- Pavement to be Removed
- New Turf
- Turf to be Reconstructed
- Pavement Removal Turf
- Bordering Vegetated Wetland
- Land Under Water
- Bank
- 200-ft Buffer Zone
- 200-ft Buffer Zone

Scale 1:2,880
1 inch = 240 feet

0 120 240 Feet

Basemap: Nearmap Aerial Image, April 2023

OVERVIEW



Cape Cod Gateway Airport Barnstable, Massachusetts

Figure 4.1-8

Taxiway D Alternative 2A - Standard side slope (4:1)

- **Alternative 2B/Preferred Alternative - Steeper side slope (higher slope within TOFA)**

Alternative 2B, similar to Alternative 2A, would construct a partial parallel taxiway with a 400-foot standard separation east of Runway 15-33 from Taxiway B to the existing Taxiway A1 (see **Figure 2.2- 1**). This alternative also prevents safety concerns of two-way taxiing (conflicts between arriving and departing aircraft) occurring in front of the terminal building and addresses the following FAA airfield geometry and design standards: Direct access from apron areas to the runway, taxiway and runway acute angles, and high energy crossing.

Impacts on Upper Gates Pond (BVW, Bank, and LUW) from this alternative will be lower due to the increased sides slopes to the north of Taxiway D and wider area of Taxiway Safety Area and TOFA.

- **Alternative 2C - Retaining Wall**

Alternative 2C is similar to both Alternative 2A and 2B as it would construct a partial parallel taxiway with a 400-foot standard separation east of Runway 15-33 from Taxiway B to the existing Taxiway A1. This alternative, as with the others, meets the Project's purpose and need by preventing safety concerns of two-way taxiing (conflicts between arriving and departing aircraft) occurring in front of the terminal building, and addresses the following FAA airfield geometry and design standards: Direct access from apron areas to the runway, Taxiway and Runway acute angles, and High energy crossing.

Alternative 2C includes the construction of a retaining wall at the bottom of the taxiway side slopes. The construction of a retaining wall would result in reduced impacts on Upper Gates Pond (BVW, Bank, and LUW) over the impacts from 2A and 2B, due to the ability to create steeper side slopes to the north of Taxiway D and wider area of Taxiway Safety Area and TOFA.

Higher side slopes do not meet the TSA and TOFA standards. Also, this alternative still results in impacts on Upper Gate Pond, and a high cost due to anticipated subsurface work associated with constructing a structure retaining wall. Therefore, this alternative has been eliminated.

- **Alternative 2D Bridge /Elevated Taxiway Surface**

Alternative 2D includes the construction of a structural bridge component to Taxiway D at the segment crossing Upper Gate Pond, spanning the bottom of the taxiway side slopes. The construction of a bridge/elevated taxiway structure would result in the lowest direct impacts on Upper Gate Pond (BVW, Bank, and LUW) over the impacts from Alternatives 2A, 2B, and 2C. This alternative requires extensive structural design, significant amounts of new construction, as well as high costs. Therefore, it has been eliminated from consideration.

4.1.2.1.3 Taxiway D Alternative 3 – Reduced Length Partial Taxiway

Taxiway D Alternative 3 is similar to the Taxiway D Alternative 2B (Preferred Alternative) but would maintain the run-up pad in its existing location and include the removal of Taxiway D between Taxiway A and the proposed partial parallel Taxiway D (see **Figure 4.1-9**). The partial parallel taxiway in this alternative is shorter than other alternatives, extending less toward Runway 15 end.

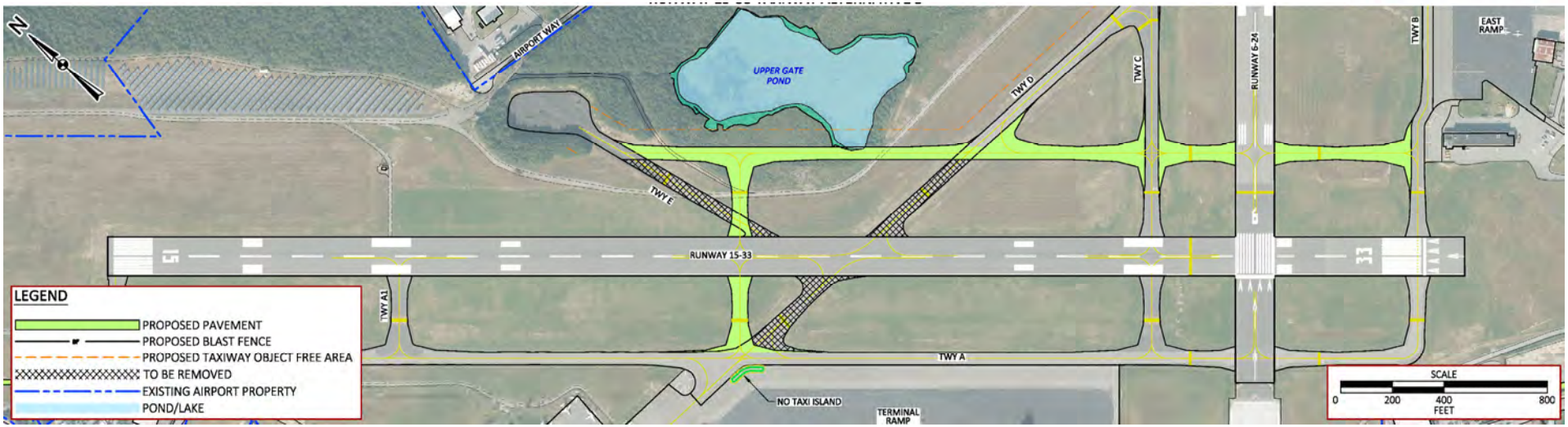


Figure 4.1-9

Taxiway D Alternative 3 – Reduced Taxiway Length

This alternative resolves safety concerns of two-way taxiing occurring in front of the terminal building and eliminates direct access from two points but results in a high-energy crossing on Runway 15-33. While this alternative improves safety compared to the No-Build Alternative by providing a standard 400-foot runway-taxiway centerline separation and improves non-standard FAA geometry conditions (eliminates non-standard runway taxiway intersection angles, the y-shaped runway crossing, and direct access), it does not meet FAA geometry standards due to the high-energy runway crossing.

4.1.2.1.4 Taxiway D Alternative 4 – Reduced Taxiway/Runway Separation

Alternative 4 would locate a parallel Taxiway D south of Upper Gate Pond closer to Runway 15-33, compared to prior alternatives, to avoid impacts associated with BVW, Bank and LUW entirely. In Alternative 4, Taxiway D would be located approximately 300 feet from the runway centerline. Additionally, there would be less tree removal required for obstructions.

Locating the taxiway less than 400 feet from Runway 15-33 would not meet FAA separation standards. Separation distances are measured from runway/taxiways (centerline to centerline) and are based on ADG. The separation distance dimensions in Alternative 4 would not meet the FAA Runway Design Standards for the critical aircraft of these runway and taxiway surfaces. Taxiway/Runway separation distances are a safety-based standard to protect the safety of the flying public. This alternative results in a non-standard geometry on the airfield, which results in unsafe conditions, and would not be approved by FAA. Therefore, this alternative has been eliminated from further consideration.

4.1.2.2 Taxiway B

The existing taxiway system to Runway 6-24 has multiple non-standards geometry conditions. One build alternative was created to resolve these existing deficiencies. *4.1.2.2.1 Alternative 1 – No-Build Alternative*

Alternative 1, the No-Build alternative, leaves Taxiway B in its current location and does not address existing non-standard conditions with potential safety concerns, including non 90-degree taxiway angle, high energy crossing, direct access, and multiple crossings. The No-Build Alternative does not meet the existing and future facility requirements related to taxiway geometry and safety enhancements and was dismissed from further consideration.

4.1.2.2.2 Alternative 2 – Preferred Alternative

Alternative 2 would include the reconstruction of Taxiway B (parallel to Runway 6-24), shown in **Figure 2.2-2**.

Taxiway B would be relocated to a standard 400-foot separation distance (runway centerline to taxiway centerline) from Runway 6-24. By configuring Taxiway B in a standard separation distance, aircraft taxi time is reduced. Also, this alternative would achieve complaint TOFAs and provide an opportunity for the Airport to pursue additional planned aeronautical development on the East Ramp as discussed in Section 3.1.5.

- This alternative enhances safety by constructing a perpendicular crossover taxiway south of the existing glide slope allowing the new taxiway's TOFA to remain clear of the glide slope critical area (no obstructions are allowed within this area).
- Taxiway B Alternative 2, removes Taxiway C1 and keeps the existing portion of the stub taxiway connecting to Runway 6-24.
- Construct a midfield taxiway to Taxiway B to enhance efficiency of taxiway turnoff options for aircraft exiting the runway. This alternative also keeps the existing Taxiway D exit to Taxiway C as an acute-angled exit only taxiway.

The taxiway configuration in Alternative 2 allows heavy/large aircraft landing on Runway 6 the full-length available and could use Taxiway C to taxi back to the terminal or North Ramp area of the Airport. Additionally, single- and twin-engine (small) aircraft landing via Runway 24 would be able to exit prior to the Runway 15-33 intersection, and large aircraft would have the opportunity to exit prior to the Runway 15-33 intersection. These taxiway enhancements would allow aircraft to efficiently exit the runway after landing and increase safety for Airport users.

Alternative 2 limits runway crossings of aircraft using Runway 6-24, which limits the number or time with which potential incursions or accidents can take place. This alternative enhances safety by removing the crossing within the high-energy portion of the runway and achieves compliance with FAA standards.

Table 4.1-6 Summary of Taxiway B and D Alternatives

Alternative	Proposed	Compliance	Notes
Taxiway B			
Alternative 1 (No Build Alternative)	Leave Taxiway B in its current location		Does not physically separate taxiway from apron
Alternative 2 (Preferred Alternative)	Reconstruct Taxiway B parallel to Runway 16-24 with standard 400-foot separation distance (centerline to center line) from Runway 6-24	Achieve compliant TOFA. Remove high-energy crossing	Approximately 226,200 sf (5.193 acres) net increase in pavement area
Taxiway D			
Alternative 1 (No Build Alternative)	Leave the Taxiway D in its current configuration		Does not address existing non-standard conditions with potential safety concerns. Does not meet the existing and future facility requirements related to taxiway geometry and safety enhancements. Approximately 164,700 sf (3.781 acres) net increase in pavement area
Alternative 2 (Preferred Alternative)	Construct partial parallel taxiway with a 400-foot standard separation east of Runway 15-33 from the existing Taxiway A1 across existing Taxiway D and Runway 6-24 to proposed relocated Taxiway B Construct a run-up area along the north side of the proposed taxiway. Remove Taxiway D between existing Taxiway A across Runway 15-33 and up to the new partial parallel taxiway	Consistent with the Project's purpose and need. Prevents safety concerns of two-way taxiing	Impacts to wetland resource areas associated with Upper Gate Pond
Alternative 2A	Construct a partial parallel taxiway with a 400-foot standard separation east of Runway 15-33 from Taxiway B to existing Taxiway A1 Standard side slope of 4:1, Safety Areas and TOFA for TDG 3/ADC III aircraft	Prevents safety concerns of two-way taxiing (conflicts between arriving and departing aircraft) occurring in front of the terminal building. Addresses FAA airfield geometry and design standards	Largest impacts associated with Upper Gate Pond 11,800 sf BVW, 28,000 sf LUW and 540 lf of Bank
Alternative 2B	Construct a partial parallel taxiway with a 400-foot standard separation east of Runway 15-33 from Taxiway B to existing Taxiway A1 Steeper side slope (higher slope within TOFA)	Prevents safety concerns of two-way taxiing (conflicts between arriving and departing aircraft) occurring in front of the terminal building. Addresses FAA airfield geometry and design standards	Reduced impacts associated with Upper Gate Pond 4,600 sf BVW 12,700 sf LUW 300 lf Bank

Table 4.1-6 – Summary of Taxiway Alternatives (Continued)

Alternative	Proposed	Benefits	Notes
Alternative 2C	Construct a partial parallel taxiway with a 400-foot standard separation east of Runway 15-33 from Taxiway B to existing Taxiway A1. Construct a retaining wall at the bottom of the taxiway side slopes	Does not meet Taxiway Safety Area requirements	Reduced permanent impacts to Upper Gates Pond. Wall over 16 feet tall required 3,500 sf BVW 7,100 sf LUW 230 lf Bank
Alternative 2D	Construct a structural bridge component to Taxiway D at the segment crossing Upper Gate spanning the bottom of the taxiway side slopes	Does not meet Taxiway Safety Area requirements	Extensive amounts of new construction High costs
Alternative 3	Construct a partial parallel taxiway with a 400-foot standard separation east of Runway 15-33 from Taxiway B to existing Taxiway A1 Maintain the run-up pad in its existing location. Remove Taxiway D between Taxiway A	Resolves safety concerns of two-way taxiing occurring in front of the terminal building	Does not meet FAA geometry standards - results in a high-energy crossing on Runway 15-33
Alternative 4	Locate a parallel Taxiway D south of Upper Gate Pond closer to Runway 15-33, approximately 300ft from the runway center line. Compared to prior alternatives, will avoid impacts associated with BVW, Bank and LUW. located.		Does not meet FAA defined separation standards. It results in a non-standard geometry on the airfield, that results in unsafe conditions

4.2 Airspace Control Improvements

4.2.1 Runway 33 RSA and Runway Object Free Area (ROFA) Avigation Easements

The FAA defines ROFAs as an area cleared of all objects except those that are related to navigational aids and aircraft ground maneuvering. ROFA is also centered around runways to enhance the safety of aircraft operations. FAA design standards for ROFAs surrounding runways serving AAC-ADG C-III aircraft are a width of 800 feet, a length that extends 600 feet prior to the landing threshold, and a length that extends 1,000 feet beyond the runway end. ROFAs and objects within it should be at or below the nearest Runway Safety Area elevation. Any penetration to the ROFA requires a modification to standards (MOS) under **FAA Order 5300.1G *Modifications to Agency Airport Design, Construction, and Equipment Standards***.

4.2.1.1 Alternative 1 – No-Action Alternative

The No-Action Alternative would not seek to acquire, on a willing seller basis, the approximately 1.3 acres of land within Runway 33 needed for use as object free areas. This Alternative does not address the multiple penetrations to the ROFA including Iyannough Road, Mary Dunn Way, off-Airport buildings, Airport perimeter fence, and ARFF / SRE Ramp. The penetrations to the ROFA would continue to exist, and under FAA Order 5300.1G *Modifications to Agency Airport Design, Construction, and Equipment Standards*, a Modification to Standards (MOS) would need to be updated every five years.

4.2.1.2 Alternative 2 – Acquire Easements

The Proposed Action will acquire avigation easements from willing parties designed to bring existing ROFAs into Airport control. Currently, not all ROFAs are within Airport control for existing conditions. A total of four (4) easements for 0.8 acres have been identified as out of airport control, associated with Runway 33 end. These are identified as Parcels 33-1 through 33-4 on the Town parcel map (see **Figure 3.3-1**). Roadways such as Iyannough Road and Yarmouth Road are not proposed for acquisition.

4.2.2 Enhance Airport Control Over RPZ Properties

RPZs are large trapezoidal areas on the ground off each runway end that are within aircraft approach and departure paths. The RPZ is intended to enhance the protection of people and property on the ground. Many land uses including residential, churches, and fuel storage are prohibited by FAA standards within these areas. These limitations are only applicable if the RPZ is owned or controlled by the Airport sponsor.

4.2.2.1 Alternative 1 – No-Action Alternative

The No-Action Alternative would not provide incremental enhancements to safety by increasing the Airport's control of the land area in the RPZs, on a willing seller basis.

Areas within RPZs that are not currently under Airport control in avigation easement or fee simple include all portions of the Runway 6 RPZs west of Iyannough Road, the north and southwest corners of the Runway 15 RPZ, the southern corner of the Runway 24 RPZ, the eastern portion of the Runway 33 RPZ, which total 44 acres/134 parcels. Airport control of these areas could be obtained through direct property acquisition or easements or zoning to control development and land use activities.

The No-Action Alternative would not seek to enhance control of approximately 44 acres within current RPZs off Airport property. Enhancing control of these areas allows the Airport to meet FAA standards for controlling obstructions, preventing future obstruction, and protecting airspace surfaces. However, the current RPZ conditions are grandfathered into the standards, and as a result, are considered standard by the FAA. The no Action Alternative would not acquire an additional 9.95 acres of easements for the proposed runway extension.

4.2.2.2 Alternative 2 – Preferred Alternative

The Proposed Action will acquire avigation easements from willing parties designed to bring existing RPZs and the proposed Runway 15 RPZ into Airport control. A total of four (4) easements for 9.95 acres have been identified as out of Airport control.

Chapter 5.0

Affected Environment

5.0 AFFECTED ENVIRONMENT

5.1 Introduction

This chapter describes the environmental conditions of the potentially affected geographic areas of the Proposed Actions at the Airport. The following discussion, designed to meet the requirements of both NEPA and MEPA, is based on analyses conducted to understand potential impacts of the Proposed Actions. Resource categories identified for analysis are in accordance with FAA Orders 1050.1F, *Environmental Impacts: Policies and Procedures* (Order 1050.1F) and 5050.4B*, NEPA Implementing Instructions for Airport Actions* (Order 5050.4B) and MEPA 301 CMR 11.07 (6)(g) "Existing Environment".

5.2 Project Area

For the purposes of discussing existing conditions, the Airport refers to the entirety of the Airport's property limits, and the Project Area(s) (or Project Site per MEPA Certificate) refers to the portion of the property on which improvements are proposed. The locations of each identified Project vary on the Airport property. **Figure 1.1-3** identifies all proposed Projects at the Airport.

All the proposed airside and landside improvement projects are located on Airport property and are consistent with existing aviation uses. The "study area" for each of the resource categories varies according to area of potential impact. Potential off-Airport property avigation easement acquisition areas are briefly discussed below and in more detail in Chapter 6.0.

5.3 Topography, Geology, and Soils (MEPA/NEPA)

5.3.1 Topography

The Airport is situated at elevations ranging from 30 feet to 60 feet above mean sea level (MSL). The topography at the Airport is generally flat with a general downward slope from the center of the Airport to the Runway 24 end. The Airport also has a rising gradient from the center of the Airport (approximately 40 feet) towards the northwest end of the Airport near Runway 15 end (approximately 60 feet). According to Massachusetts GIS contour data, the central portion of the Airport is at an elevation of approximately 40 feet, while the northeastern portion of the Airport is approximately 30 feet (Runway 24 end), and the northwestern portion elevation is at approximately 50-65 feet. The runways are elevated at 54.1 feet (15-end), 42.6 feet (33-end), 44.4 feet (6-end), and 39.2 feet (24-end).

The lower elevations of the Project Sites are associated with Upper Gate Pond. For example, the Upper Gate Pond's embankment is at an elevation of around 45 feet and the pond's water elevation is around 25 feet above MSL, resulting in a relatively steep drop of 20 feet down to the pond itself.

5.3.2 Geology

Geology in the Cape Cod region contains sorted and stratified sediments composed of gravel, sand, silt, and clay deposited in layers by glacial meltwater. Sediments can occur as four basic textural units: gravel deposits, sand and gravel deposits, sand deposits, and fine deposits. On **Figure 5.3-1**, showing surficial geologic conditions, gravel and sand deposits are shown as Coarse Deposits where they occur at the land surface. Fine Deposits also are shown where they occur at the land surface.

Within the Airport site, geology is characterized as "Coarse deposits." [1] Coarse deposits consist of gravel deposits, sand and gravel deposits, and sand deposits.

- Gravel deposits are composed of at least 50 percent gravel-size clasts; cobbles and boulders predominate; minor amounts of sand that occur within gravel beds, and sand comprises a few separate layers. Gravel layers generally are poorly sorted, and bedding commonly is distorted and faulted due to post depositional collapse related to melting of ice.
- Sand and gravel deposits occur as mixtures of gravel and sand within individual layers and as layers of sand alternating with layers of gravel. Sand and gravel layers generally range between 25 and 50 percent gravel particles and between 50 and 75 percent sand particles. Layers are well sorted to poorly sorted; bedding may be distorted and faulted due to post depositional collapse.
- Sand deposits are composed mainly of very coarse to fine sand, commonly in well-sorted layers. Coarser layers may contain up to 25 percent gravel particles, generally granules and pebbles; finer layers may contain some very fine sand, silt, and clay.

The geology of the Airport is typical for areas on the Cape and more specifically with sites generally within the Town of Barnstable.

5.3.3 Soils

Natural Resource Conservation Service (NRCS) soil survey data, accessed via the Web Soil Survey (WSS) shows two primary soil units mapped at the Airport. The airfield soils surrounding Runway 15 are mapped Hinckley loamy sand, 0 to 3 percent slopes, which accounts for approximately 80 acres. The area around Runway 24 end is mapped as Carver loamy coarse sand, 0 to 3 percent slopes, which accounts for approximately 127 acres of the Airport. Additionally, areas of soil mapped as Urban Land account for approximately 264 acres of the Airport.

Soils that exhibit good drainage are typically considered by the U.S. Department of Agriculture Soil Conservation Service to be prime farmland. The Farmland Protection Policy Act (FPPA) requires coordination with the local office of the NRCS if the proposed project entails irreversible conversion of prime farmland to nonagricultural uses. Farmland subject to this requirement does

[1] U.S. Department of the Interior, U.S. Geological Survey. 2018. Surficial Materials of Massachusetts— A 1:24,000-Scale Geologic Map Database.

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

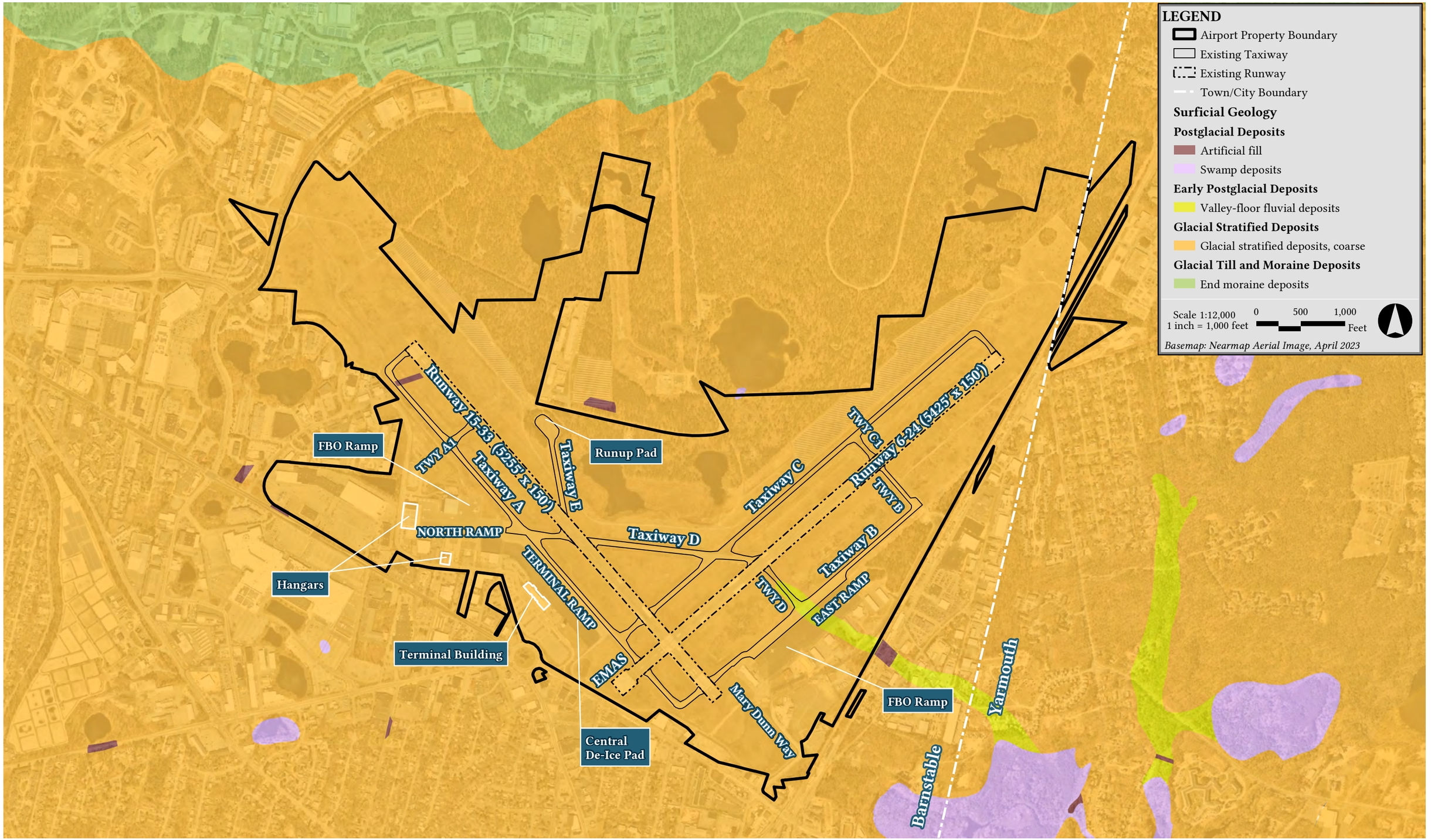

Figure 5.3-1
Surficial Geology

not have to be currently used for cropland; it may also be forestland or pastureland, but not urban or built-up land. This requirement is intended to monitor the impact that federal programs or federally funded projects have on the conversion of this resource. The Farmland Protection Policy Act (7 U.S.C. 4201-4209) (PL 97-98 amended by Section 1255 of the Food Security Act of 1985, PL 99-198) addresses the conversion of farmland to non-agricultural uses.

In Massachusetts, Executive Order 193 (March 19, 1981) is likewise intended to avoid or minimize the conversion of farmland to non-agricultural uses. According to the NRCS WSS, approximately 99 acres, which is approximately 19 percent of the airfield, is classified as prime farmland soil (Hinckley loamy sand, 0 to 3 percent slopes and Hinckley loamy sand, 3 to 8 percent slopes). Mapped farmland soils are shown on **Figure 5.3-2**. These two locations at the Airport are classified as prime farmland; however, none of those areas are in, or have been in, agricultural production since the Airport started operating.

Since the No Action and Proposed Action Alternatives would not affect topography, geology and farmlands in the primary study areas, these resources are dismissed from further consideration.

5.4 Water Resources (MEPA/NEPA)

Water resources are surface waters and groundwater that are important in providing drinking water and in supporting recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems. Surface water, groundwater, floodplains, and wetlands do not function as separate and isolated components of the watershed, but rather as a single, integrated natural system. Disruption of any one part of this system can cause impacts to the functioning of the entire system.

5.4.1 Surface Waters

Ponds proximate to and within the Project Sites include Upper Gate Pond and Lewis Pond located in between Runway 15-33 and Runway 6-24 (see **Figure 5.4-1**). The surface area of Upper Gate Pond is approximately 5.7 acres and that of Lewis Pond is approximately 4.4 acres. Upper Gate Pond is one of two small ponds located within the most northerly part of the Airport parcel; the second being Lewis Pond which is approximately 700 feet to the east. A third pond, Mary Dunn Pond, has a surface area of approximately 19.2 acres and extends only slightly into the property along the Airport's northern boundary, outside the Project Sites. Each of these waterbodies are located within distinct topographic depressions that are typical features of the pitted outwash plain upon which the Airport is located.

Upper Gate Pond has a perimeter measuring approximately 2,500 feet. It has a complex shape that is elongated along the north-south axis and somewhat resembles a goldfish. Its meandering shoreline presents itself as a series of small coves, two of which are occupied by culverts and spillways associated with the Airport's stormwater management system along the southeastern edge. A bathymetric survey of the pond's western portion was completed by CR Environmental in the Fall of 2022. During surveying, the water depth was measured and recorded at 182 locations on a 25 by 25-foot grid and recorded depths ranged between 0.9 and 6.8 feet. The complete results of the bathymetric survey are provided in **Appendix E**.

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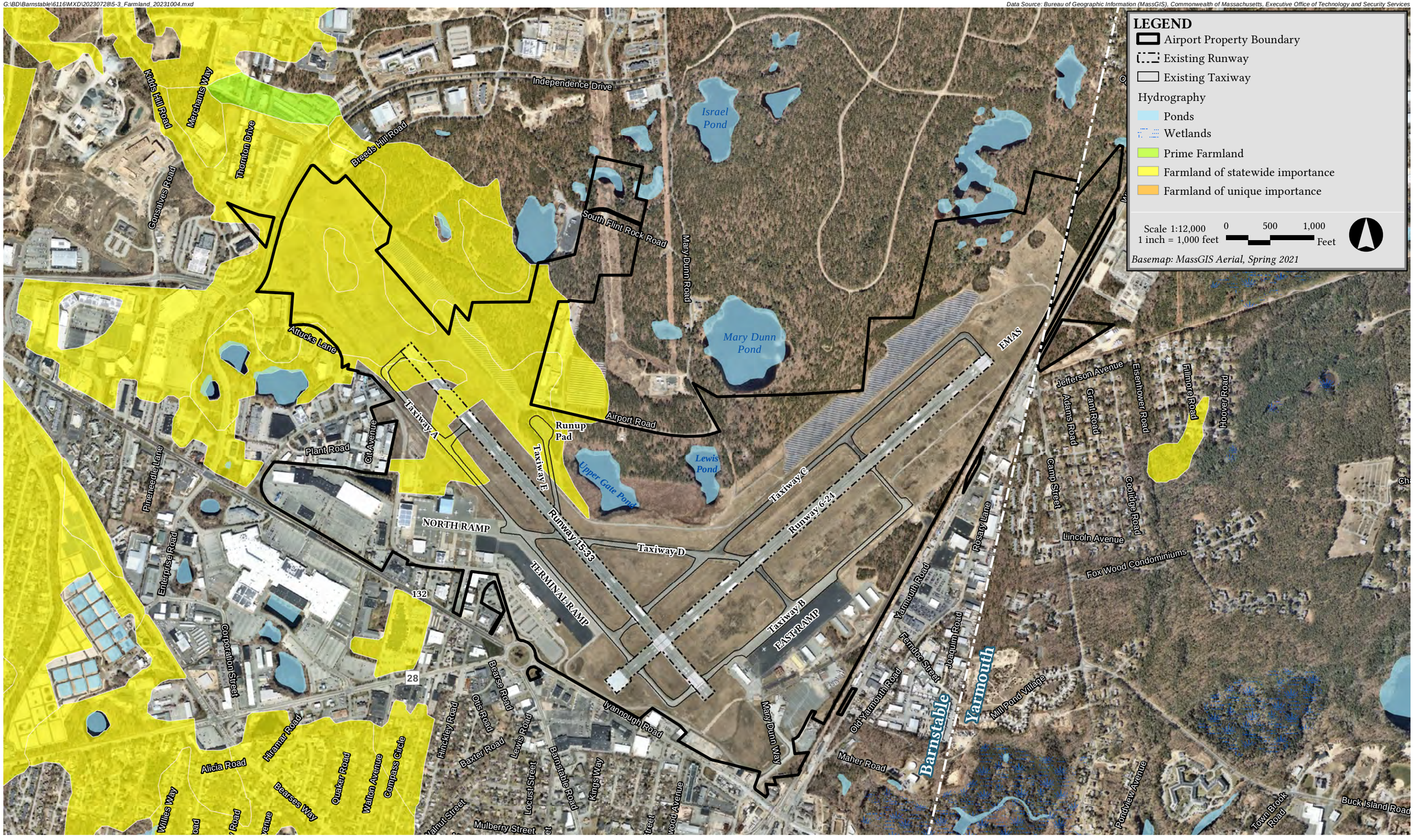
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Cape Cod Gateway Airport Barnstable, Massachusetts

Figure 5.3-2
Mapped Farmland Soils

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

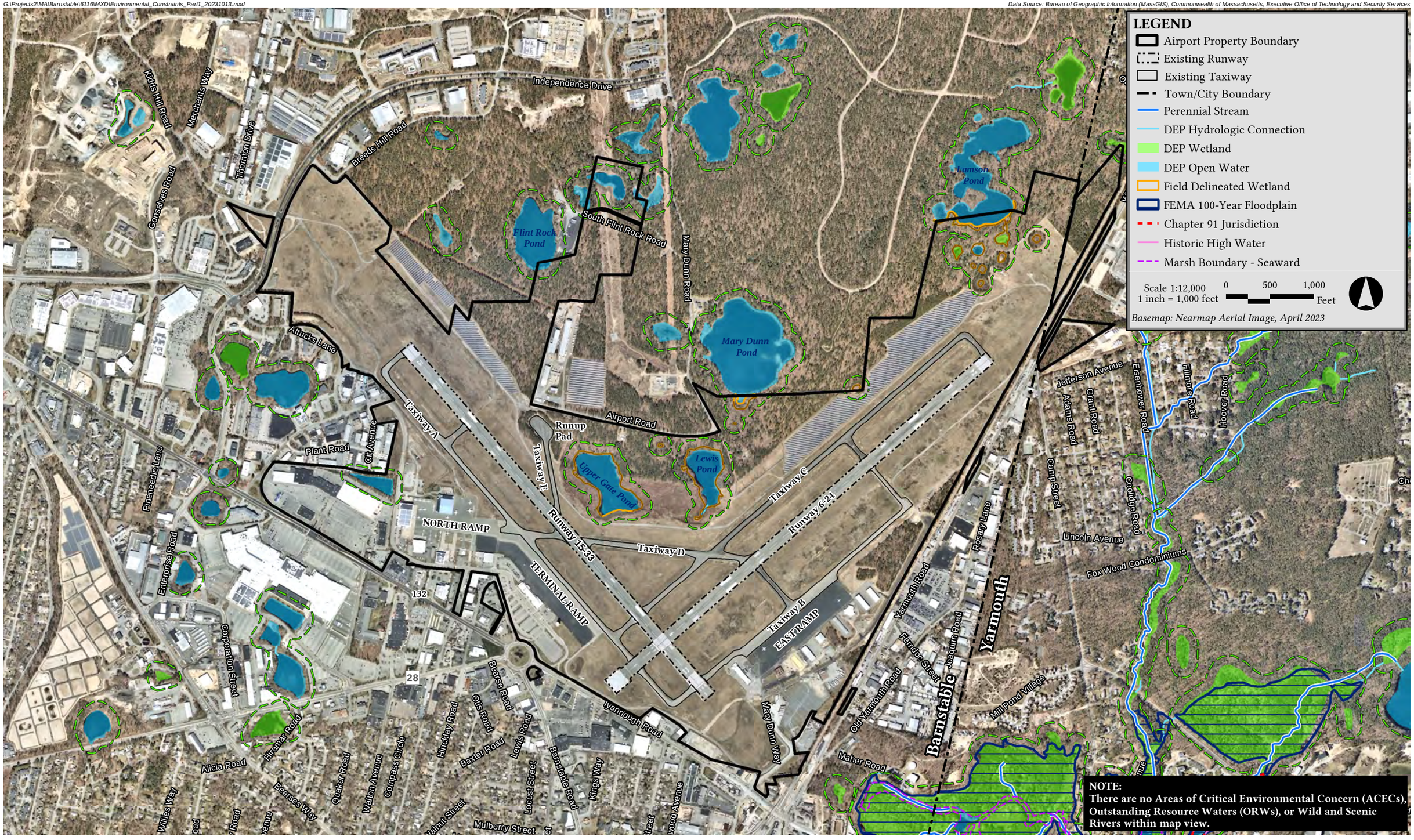

Figure 5.4-1

Wetlands Resource Areas, FEMA Flood Hazard Areas, and Chapter 91 Tidelands Jurisdiction

The terrain surrounding Upper Gate and Lewis Pond contains steep embankments and bordering vegetated wetlands associated with the ponds. Vegetation surrounding the southern segments of the ponds is disturbed frequently due to maintenance mowing by the Airport operations staff. Additional historical disturbance within buffers around the ponds is due to debris from historically placed materials near the outfall at Lewis Pond, surrounding Lewis Pond, and along the southern and eastern shores of Upper Gate Pond creating irregular embankments. These ponds have historically served as outfalls for stormwater discharge from the Airport property (as required by past permits).

The Runway Visibility Zone (RVZ) between the two runways is maintained free of tall/dense vegetation to allow aircraft to verify the location and actions of other aircraft and vehicles on the ground. The northern portions of the pond (outside of the RVZ) contain densely forested embankments, extending into the Hyannis Ponds Wildlife Management Area (WMA). The ponds are separated by an area of forested upland and are not hydrologically connected through any surface water features.

In addition to Upper Gate and Lewis Ponds, Mary Dunn Pond and Lamson Pond and associated bordering vegetated wetlands extend onto Airport property, outside the limits of the Project Site. Mary Dunn Pond, the largest of the four ponds, located to the north of Taxiway C, supports a classic Coastal Plain Ponds Community consisting of narrow concentric bands of vegetation that can provide habitat for some of Massachusetts' rare plant species. Lamson Pond, located to the northeast quadrant of the Airport, also supports Coastal Plain Pond communities.

These ponds and their associated wetlands may be subject to regulation under the federal Clean Water Act, the Massachusetts Wetlands Protection Act, the CCC RPP, and the Town Wetlands Ordinance. Like other ponds on Cape Cod, both ponds are classified as a Class B water body, meaning that they have been designated as habitat for fish, other aquatic life, and wildlife, and for primary or secondary contact recreation, according to the Massachusetts Surface Water Standards (314 CMR 4.00). The ponds are listed on the Massachusetts Division of Watershed Managements' integrated list of impaired waters, Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act, 2018-20.

5.4.1.1 Stormwater Management Infrastructure

The Airport maintains a Stormwater Pollution Prevention Plan (SWPPP) in accordance with EPA's National Pollutant Discharge Elimination System (NPDES) Stormwater Multi-Sector General Permit (MSGP) issued on January 15, 2021 (Airport NPDES ID MAR 053164, see **Appendix F**). The majority of stormwater collected on impervious surfaces at the Airport is managed through a network of 300 catch basins discharging to surface water outfalls, seven bioretention basins which discharge to infiltration basins, vegetated swales, and Class V injections wells (more commonly known as leaching catch basins) (see **Figure 5.4-2**). A portion of stormwater in each drainage area is also infiltrated at the edge of impervious surfaces in the form of sheet-flow runoff. The boundaries of these areas are controlled primarily by the topography of the land, and in some cases, the surrounding roads, taxiways, and runways. The majority of Airport property is pervious

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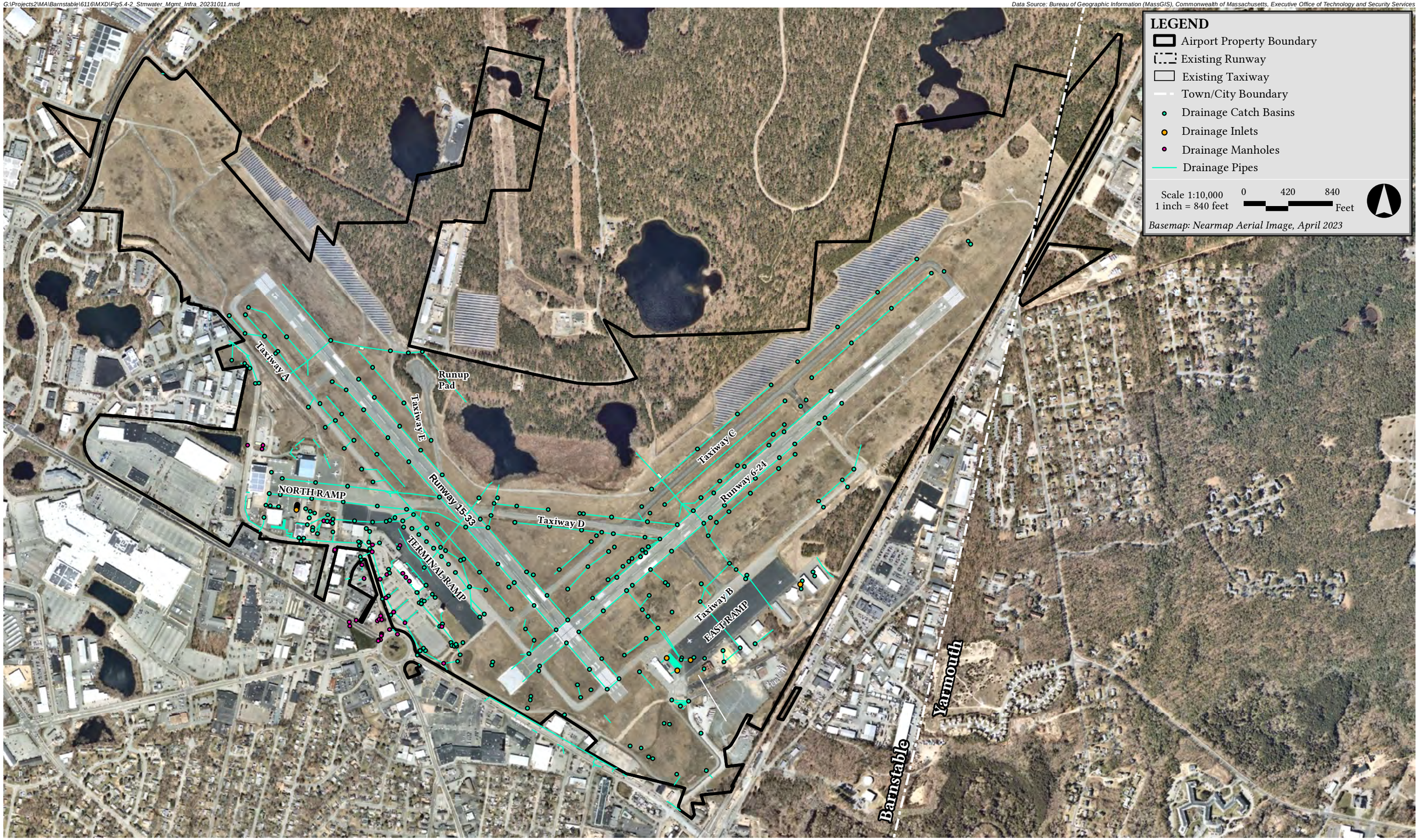
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Cape Cod Gateway Airport **Barnstable, Massachusetts**

Figure 5.4-2
Existing Stormwater Management Infrastructure

vegetated airfield surfaces in areas characterized by little to no potential for potential pollutants to be exposed to stormwater. See **Table 5.4-1** for a summary of drainage areas and treatment best management practices.

Upper Gate Pond receives stormwater from a 31-acre drainage area including portion of Runway 15/33, portions of Taxiways A and D, and a portion of the North Ramp including the Gate F Fuel Farm which is collected through a network of catch basins discharging to Outfalls B and C. Two Oil/Water Separators are located within the Gate F Fuel Farm to intercept petroleum prior to entering the stormwater system in the event of a release. Prior to discharge at either location, stormwater is treated by Vortechs® hydrodynamic separators. Since the installation of these units in 2011, 100% of stormwater discharged to the pond receives pretreatment.

Table 5.4-1 Existing Stormwater Management Drainage Areas

Drainage Area ID	Size (acres)	Uses	Existing BMPs
A	25.9	Runway 15/33 and Taxiway A	Catch basins with sediment traps and a Vortechs water quality unit
B	14.9	Main Terminal apron, South Ramp, and Taxiway A	Catch basins with sediment traps, an oil/water separator and a Vortechs water quality unit
C	31.1	Runway 15/33, Taxiways A and D, North Ramp, and Gate F Fuel Farm	Catch basins with sediment traps, two Oil/Water Separators, Stormtech system, and Vortechs water quality units
D	130.2	Runway 6/24, Runway 33 approach of Runway 15/33, Taxiway C, and Taxiways B and D	Catch basins with sediment traps and a Vortechs water quality unit
E	7.7	Rectrix Aerodrome Center, Inc. and its associated paved apron, access road from Barnstable Road to the hangar, and several paved parking lots	bioretention basin and catch basins with sediment traps
F	14.5	Airport access road connecting Attucks Lane to Barnstable Road, Barnstable Road, tenant parking lots, overflow parking lots, the Griffin Avionics apron area, and the Cape Town Shopping Center parking lot	Catch basins, O/WS, Stormtech underground recharge structures, and an infiltration basin
G	10.7	North Ramp, Taxiway D, and paved apron areas adjacent to tenant hangars	Catch basins with sediment sumps and oil/water separator
H	8.9	Taxiway B, Perimeter Road, transient area for aircraft, aircraft support vehicles, and ARFF/OPS and Maintenance vehicles	Catch basins with sediment sumps
I	5.2	Hexagon hangar and Kingsbury Aviation hangars	Catch basins with sediment sumps
J	10.0	East Ramp apron, Taxiway B, and tenant hangars	Catch basins with sediment sumps and vegetated swale

Table 5.4-1 Existing Stormwater Management Drainage Areas (Continued)

Drainage Area ID	Size (acres)	Uses	Existing BMPs
K	7.3	East Ramp apron, Taxiway B, Gate P Fuel Farm, and tenant hangars	Catch basins, vegetated swale and Vortechs water quality unit
L	10.3	Steamship Authority parking lot	None, stormwater infiltrates directly into the ground surface.
M	38.5	Taxiway B, ARFF building, East Ramp apron area, the Rectrix / Air Cape Cod hangar, the Airport perimeter road, Mary Dunn Road, and the unpaved runway safety areas of the airfield at the southern ends of Runways 6/24 and 15/33	None, stormwater infiltrates directly into the ground surface.
N	13.5	Parking areas and access roads	Catch basins with sediment sumps and bioretention areas
O	1.2	Car service and rental facilities	Catch basins with sediment sumps

5.4.2 Floodplains

Floodplains are lowland areas adjoining inland and coastal waters which are periodically inundated by flood waters, including flood-prone areas of offshore islands. Floodplains are often discussed in terms of the 100-year flood. The 100-year flood is a flood having a 1 percent chance of occurring in any given year. The 100-year flood is also known as the base flood. Floodplains are valued for their natural flood and erosion control, enhancement of biological productivity, and socioeconomic benefits and functions. Airport development actions must avoid impacting floodplains if a practicable alternative exists to comply with Executive Order 11988 (1977) *Floodplain Management* and the US Department of Transportation (USDOT) Order 5650.2 *Floodplain Management and Protection*. In addition, the FAA has provided guidance for floodplain analysis that needs to be incorporated in NEPA evaluations to adhere to EO 14030 *Climate-Related Financial Risk* (May 20, 2021) and the earlier EO 13690 (January 30, 2015) *Establishing a Federal Flood Risk Management Standard [FFRMS] and a Process for Further Soliciting and Considering Stakeholder Input*.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (25001C0566J, effective on 07/16/2014 and 25001C0567J, effective on 07/16/2014) show the Airport is not within the 100-year floodplain (**Figure 5.4-3**). The Airport property is not at a high risk of flooding. A small amount of forested area near Mary Dunn Pond, within the Airport property boundary but outside the Project Area, is within an area with a 0.2 percent annual chance of flood hazard.

There will be no impacts to mapped floodplains as part of this project. The nearest mapped floodplain to the Airport is located approximately 1,000 feet to the southeast. The identified flood elevation for this Zone AE is elevation 9 feet NAVD 88. As identified in Section 5.3.1 above, the Airport's runway elevation is 52 feet NAVD 88.

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

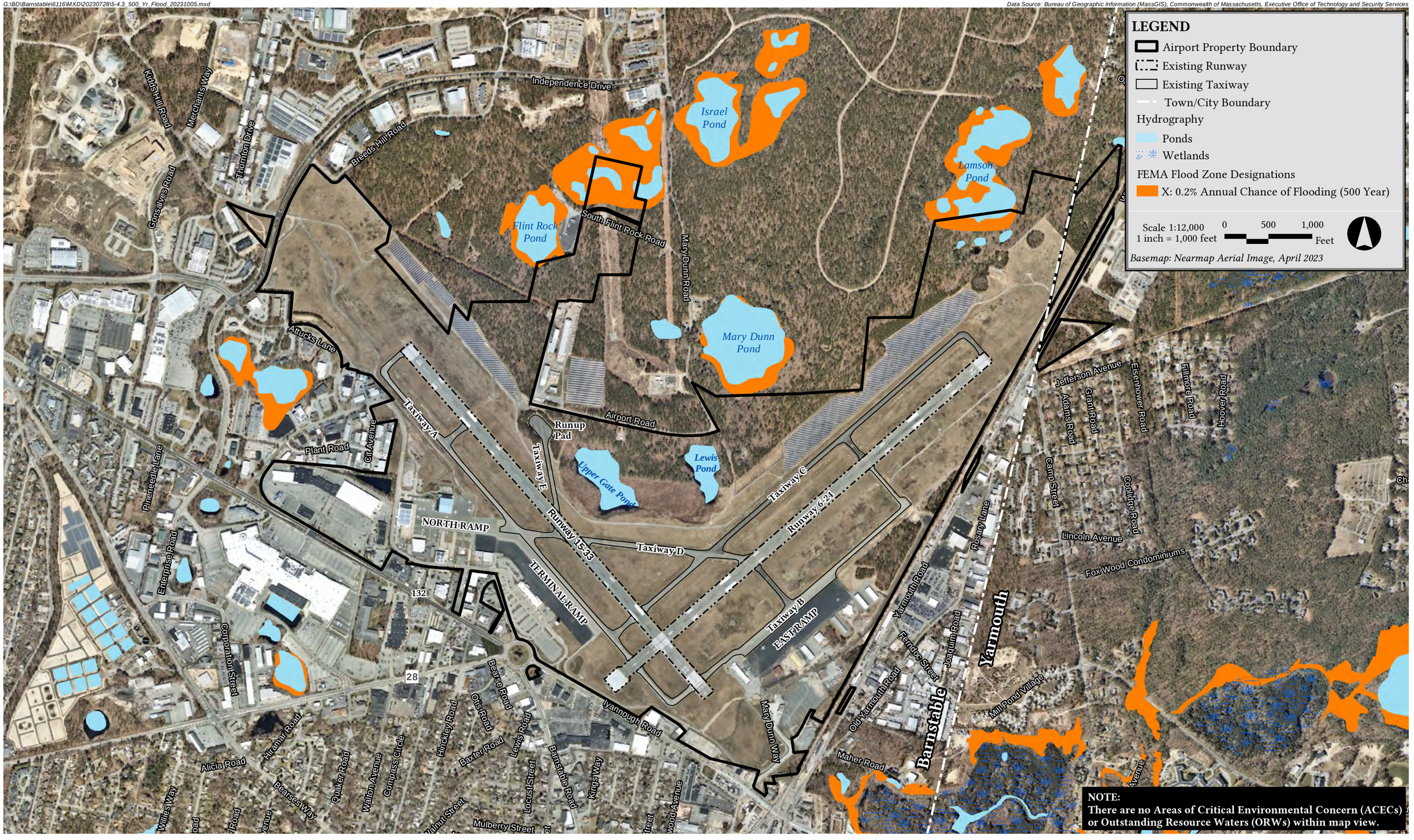

Figure 5.4-3
Environmental Constraints: FEMA Flood Hazard Areas

5.4.3 Wetlands

The Airport contains several areas of freshwater ponds (see Section 5.4.1 above), wetlands bordering these ponds, and isolated vegetated wetlands, see **Figure 5.4-1**. The majority of these wetlands are located on the northern and northeastern portions of the airfield. Adjacent to the Airport's northern boundary is the Hyannis Ponds WMA.

Wetlands areas have been identified during past field surveys as well as recent targeted wetland delineations of resource areas within limits of disturbance of the Projects in the Airport's Master Plan. Wetland and aquatic resources within the Airport's boundary are protected by state, local, and federal statutes including the Massachusetts Clean Water Act, administered by MassDEP under the M.G.L. Ch 21 § 26-53, the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131 § 40), the Town of Barnstable Wetlands Protection Bylaw (Chapter 237), and the Cape Cod Commission Regional Policy Plan, approved as Barnstable County Ordinance 19-01 and amended in 2021. A description of wetland resources areas in or near the Project limits is provided below.

Upper Gate Pond and Lewis Pond experience large growths of submerged aquatic vegetation and emergent species that cover the surface of the ponds during the growing season. Bordering Vegetated Wetlands (BVW)/Freshwater Wetlands surround the two ponds. Various tree species are found along the banks such as willow (*Salix spp.*) and red maple (*Acer rubrum*) with occasional tupelo (*Nyssa sylvatica*). Dominant shrub species include fetterbush (*Leucothoe racemosa*), sweet pepperbush (*Clethra alnifolia*), northern arrowwood (*Viburnum dentatum*), winterberry (*Ilex verticillata*), maleberry (*Lyonia ligustrina*) highbush blueberry, inkberry, nannyberry (*Viburnum lentago*), and European buckthorn (*Frangula alnus*). Poison Ivy (*Toxicodendron radicans*) is also located throughout the wetland areas. Portion of the pond edges contain common greenbrier in densely grown thickets. Groundcover species include sheep laurel (*Kalmia angustifolia*), and sensitive fern *(Onoclea sensibilis*).

Upper Gate Pond north of Taxiway D hosts a subaquatic community dominated by white water lily *(Nymphaea adorata).* Palustrine wetland vegetation observed along the shoreline includes highbush blueberry, sweet pepperbush, and Bebb's willow *(Salix bebbiana).*

Within the northeast quadrant of the Airport, eleven isolated freshwater depressions, ranging in size, are located within a forested area adjacent to the (Runway 24 end). One larger isolated wetland is located in the far northeastern corner of the Airport property and is greater than 0.5 acres.

These isolated freshwater wetlands are situated in a kettle hole-like depression supported by standing water as observed in the fall/winter of 2019-2020 by Horsley Witten Group (HWG). Vegetation within these freshwater wetlands is similar to that observed within the BVW/Freshwater wetlands around Upper Gate Pond and Lewis Pond, including a stand of red maple, eastern white pine (*Pinus strobus*), and gray birch (*Betula populifolia*). Open areas in the central portions of these wetlands also commonly support sphagnum moss (*Sphagnum spp.*). Approximately one third of these isolated wetland areas are identified as potential vernal pools by the Massachusetts NHESP (see **Figure 5.10-1**). These isolated wetlands are outside of the proposed Project Areas.

5.4.4 Groundwater

Groundwater is subsurface water that occupies the space between sand, clay, and rock formations. The term aquifer is used to describe the geologic layers that store or transmit groundwater to wells, springs, and other water sources. Nearly the entire Airport and most of the land area between Route 132, Route 6, and Yarmouth Road, is situated within a zone of groundwater contribution to public water supplies. These areas are protected at the federal, state, and local level as discussed below.

The Airport is located above a Sole Source Aquifer (SSA) as designated by the U.S. Environmental Protection Agency (EPA) under Section 1424(e) of the Federal Safe Drinking Water Act. A SSA is one that supplies at least 50 percent of the drinking water consumed by the human population in the area overlying the aquifer where there is no other alternative to this water supply. This designation gives EPA authority to review all proposed federal financially assisted projects which have the potential to contaminate the area of the Sole Source Aquifer. Under the SDWA, EPA has the authority to withhold use of federal funding for construction of any proposed project within a designated SSA which it believes poses a significant threat of contamination to an aquifer.

The Cape Cod Aquifer provides 100% of the Cape's drinking water, and its highly permeable aquifer deposits make it one of the most productive groundwater systems in New England. These water supplies are susceptible to contamination from development and land uses within their watersheds. Based on previous groundwater investigations, groundwater flows in a southeasterly direction from the Airport towards Lewis Bay. The Cape Cod Aquifer is recharged solely by precipitation, with approximately 60% of rainfall and snowmelt contributing to recharge annually. All developed impervious areas and most developed open space areas within the Airport property are classified as medium yield non-potential drinking water source areas.

There are public drinking water supply wells near the Airport and the Airport is located within their wellhead protection areas, or Zone II as defined by the Massachusetts Department of Environmental Protection (MassDEP). Wellhead protection areas represent the land area where rain soaks into the ground, enters groundwater, and flows to one of the wells. See **Figure 5.4-4** for a map of wells and protection areas within the Airport.

5.4.4.1 Existing and Potential Public Drinking Water Wells

Public drinking water wells have been developed to the north and east of the Airport. The Maher Wellfield is located approximately 0.1 miles southeast from the Airport and consists of three production wells that supply approximately 30 to 35 percent of the Town of Barnstable's Water Supply Division service connections in Hyannis and Hyannis Port.

Existing wells proximate to the Airport are operated by the Barnstable Water Company (BWC) and the Barnstable Fire District. Additional wells operated by the Yarmouth Water Department are located east of Willow Street in Yarmouth. While these wells are further away from the Airport than the Maher Wells, the groundwater resources associated with them occupy a larger area of the Airport Property than those linked to the Maher Wellfield. **Figure 5.4-4** also shows potential

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

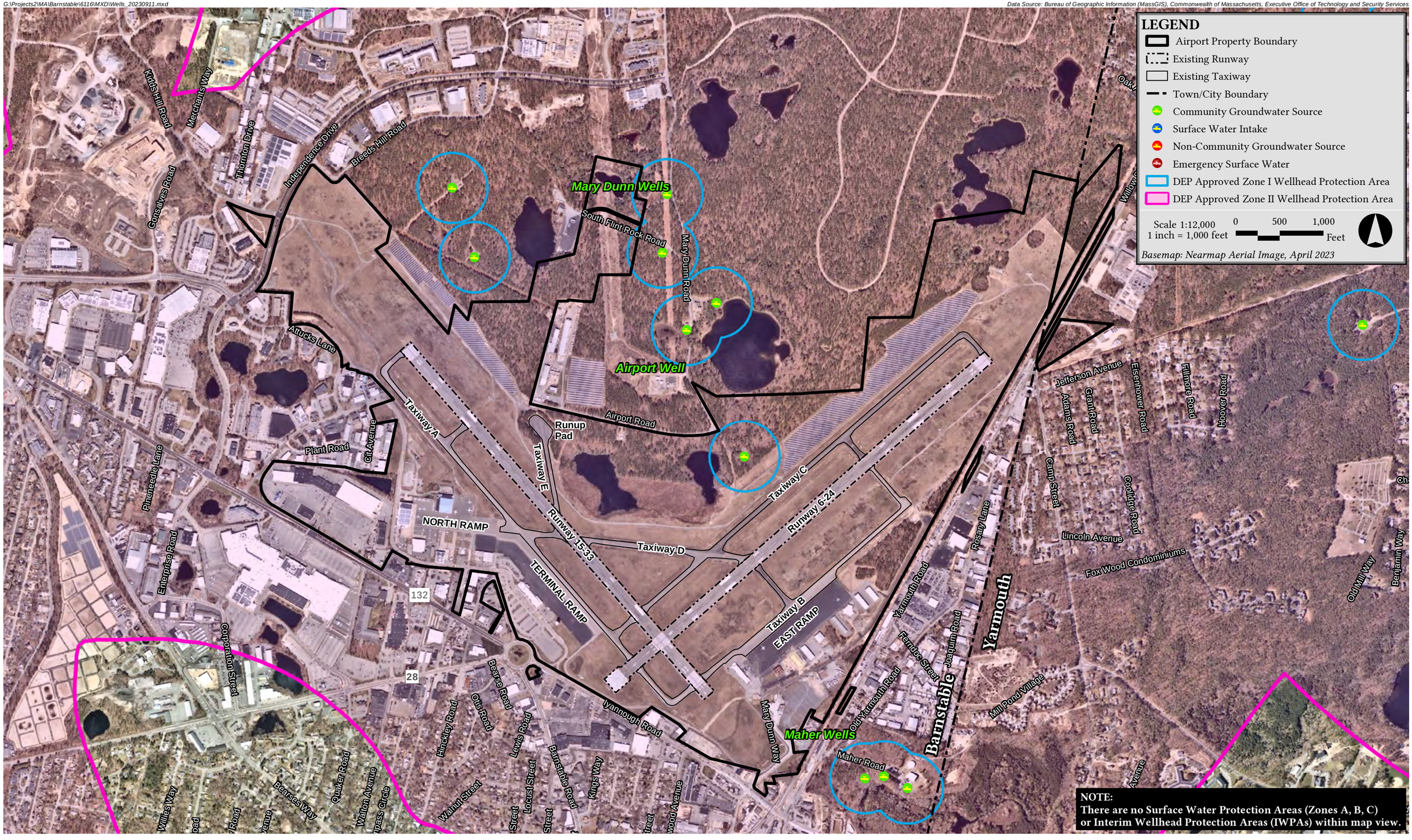

Figure 5.4-4
Groundwater Resources

future well locations, including two locations leased by the Airport to the Barnstable Water Company, and two locations on Airport property that are identified as future well sites on the Town of Barnstable's zoning map.

MassDEP regulations protect both Zone I and Zone II of public water supplies. The Zone I area is a protective area – usually a 400-foot radius - which must be owned or controlled by the public water supplier, and within which current and future land uses must be limited to those land uses directly related to the provision of the public water system or to other land uses which the public water system has demonstrated have no significant impact on water quality. Zone II is a larger area, denoting the area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at approved yield, with no recharge from precipitation). MassDEP has strict Zone I protective requirements. Zone II protection is provided through local wellhead protection zoning, passed by cities and towns under impetus from MassDEP.

The Airport is located within wellhead protection areas (land area where rain soaks into the ground, enters groundwater, and flows to one of the wells), or Zone II areas as defined by MassDEP. As shown on **Figure 5.4-4**, Zone II areas protecting wells located proximate to the Airport underlies the entire Airport property. Areas within Zone II defined by the five-year time of travel as described below reflect areas of highest sensitivity due to their direct connection to existing drinking water supplies. This area represents the portion of the larger Zone II that is most closely connected to the source well. The Barnstable Groundwater Protection Overlay District and associated regulations impose stronger restrictions on the five-year time of travel area, which is known under local zoning as the Wellhead Protection (WP) Overlay District. Additionally, several of the Cape Cod Commission policies and procedures are designed to protect groundwater resources. Project compliance with these above protection policies is discussed further in Chapter 8.0.

5.4.5 Wild and Scenic Rivers (NEPA)

Wild and Scenic Rivers are identified as rivers having remarkable scenic, recreational, geologic, fish, wildlife, historic, or cultural values as defined by the Wild and Scenic Rivers Act. If the FAA is taking an action that would physically impact resources covered by the Wild and Scenic Rivers Act, there may be consultation requirements under the Act. The Proposed Action is not located within 5 miles of a designated Wild and Scenic River as determined by the NWSR System or of a river segment identified in the NRI (see **Figure 5.4-1**). The only currently designated Wild and Scenic Rivers in Massachusetts are Nashua, Squannacook and Nissitissit Rivers; Sudbury, Assabet and Concord Rivers; Taunton River; and Westfield River.

Since the No Action and Proposed Action Alternatives would not affect Wild and Scenic Rivers in the primary study areas, this resource is dismissed from further consideration.

5.5 Coastal Resources (MEPA/NEPA)

Coastal resources include all natural resources occurring within coastal waters and their adjacent shorelands. Coastal resources include islands, transitional and intertidal areas, salt marshes, wetlands, floodplains, estuaries, beaches, dunes, barrier islands, and coral reefs, as well as fish and wildlife and their respective habitats within these areas.

The Coastal Zone Management Act (CZMA) provides for the management of U.S. coastal resources. Requirements of the CZMA ensure that activities conducted or authorized by federal agencies are consistent with approved state coastal zone management programs. Consistency requirements, as listed in the National Oceanic and Atmospheric Administration's (NOAA) implementing regulations (15 CFR part 930), apply to activities that would have reasonably foreseeable effects on land or water uses or natural resources in a coastal zone.

Cape Cod and the islands of Nantucket and Martha's Vineyard are included in the Massachusetts Coastal Zone Boundary, as identified in the Massachusetts Office of Coastal Zone Management (CZM) Policy Guide.

The Airport is located within the Massachusetts Coastal Zone (see **Figure 5.5-1**); therefore, the Project is required to undergo CZM consistency review under Section 307 of the Federal Coastal Zone Management Act of 1972. Projects requiring review under NEPA, such as those funded by the FAA would also require CZM consistency review.

Documentation of consistency is provided in Section 8.3.7, Massachusetts Coastal Zone Management Policies.

5.6 Air Quality (MEPA/NEPA)

Air quality impacts are evaluated based on requirements outlined in FAA Orders 1050.1F and 5050.4B. Specifically FAA Order 1050.1F and accompanying 1050.1F Desk Reference establishes guidelines for compliance with NEPA. The FAA establishes thresholds for determining significant impacts for the various impact categories. For air quality, the significance level is: "The action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the EPA under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations (FAA Order 1050.1F, Exhibit 4-1)." In addition to FAA requirements, there are state regulations that may apply to air quality analyses. For example, those established by MEPA.

This section presents an overview of the regulatory process, a determination of the need for an air quality assessment, and description of the existing air quality conditions at the Airport.

5.6.1 Regulatory Framework

In 1970, the CAA was enacted by the U.S. Congress to protect the health and welfare of the public from the adverse effects of air pollution. As required by the CAA, the EPA promulgated NAAQS for the following criteria pollutants: nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM) (PM_{10} and $PM_{2.5}$), carbon monoxide (CO), ozone (O_3), and lead (Pb). US EPA reports air

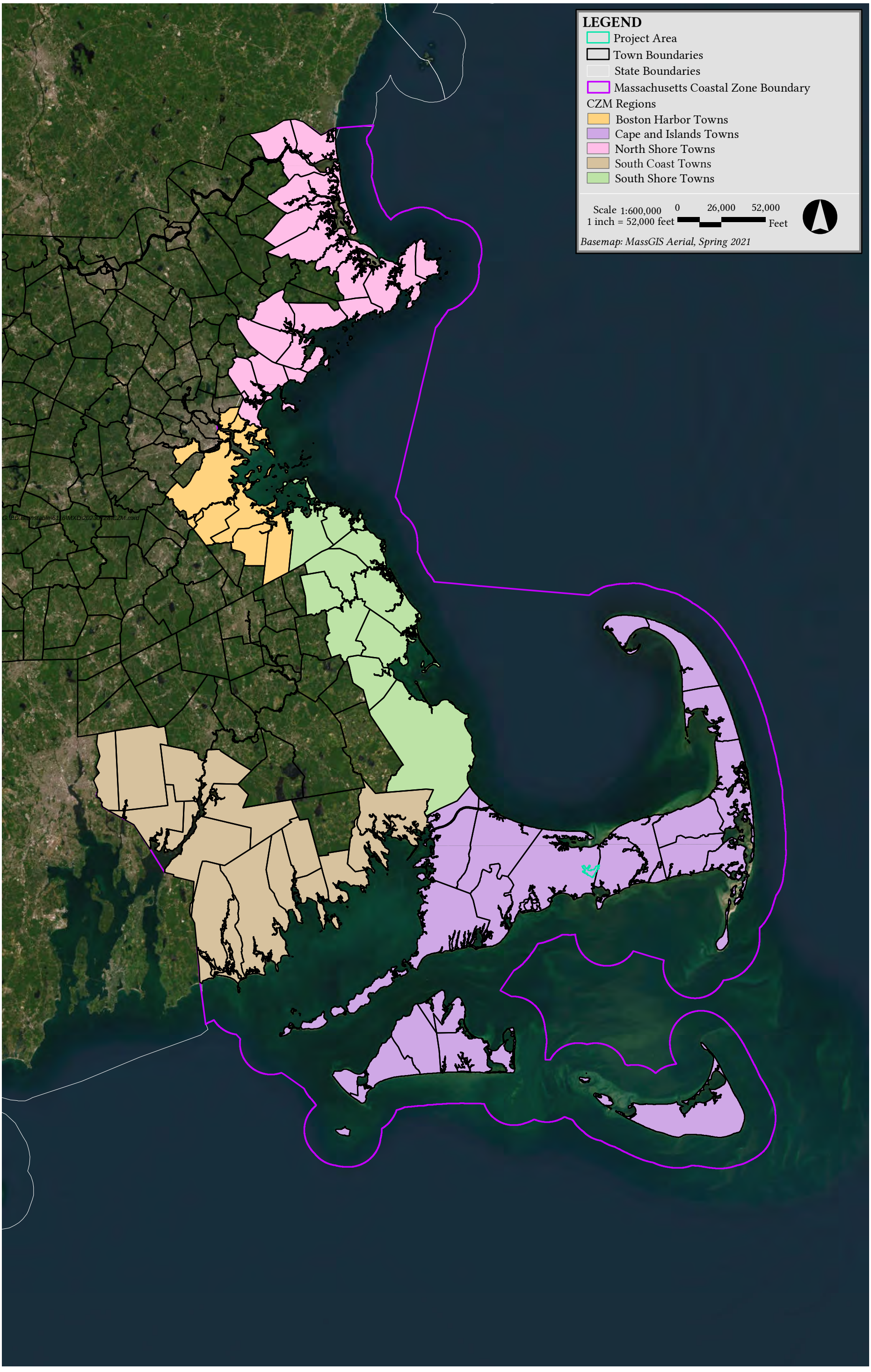

Figure 5.5-1
Coastal Zone Management Resources

pollution concentrations with respect to how the health-based NAAQS are defined. These are called design values. For example, some standards are not to be exceeded such as the annual NO_2 standard, and some standards are compared to the 98th percentile of 24-hr averages or a 1-hr daily maximum, averaged over 3 years, such as the short-term $PM_{2.5}$ and the NO_2 standards, respectively. The NAAQS are listed in **Table 5.6-1**. Massachusetts recently revised their codified standards to be identical to NAAQS.

NAAQS specify concentration levels for various averaging times and include both "primary" and "secondary" standards. Primary standards are intended to protect human health, whereas secondary standards are intended to protect public welfare from any known or anticipated adverse effects associated with the presence of air pollutants, such as damage to vegetation. The NAAQS also reflect various durations of exposure. The short-term periods (24 hours or less) refer to exposure levels not to be exceeded more than once a year. Long-term periods refer to limits that cannot be exceeded for exposure averaged over three months or longer.

The NAAQS are applicable to all of the US and territories. An area that is not in compliance with the NAAQS is deemed in nonattainment. If there is insufficient data to determine compliance, then an area is deemed unclassified and is treated as if in compliance.

Table 5.6-1 National Ambient Air Quality Standards (NAAQS)

Pollutant	Averaging Period	NAAQS (µg/m³) *Primary*	*Secondary*
NO_2	Annual [1]	100	Same
	1-hour [2]	188	None
SO_2	3-hour [3]	None	1300
	1-hour [4]	196	None
$PM_{2.5}$	Annual [1]	12	15
	24-hour [5]	35	Same
PM_{10}	24-hour [3]	150	Same
CO	8-hour [3]	10,000	Same
	1-hour [3]	40,000	Same
Ozone	8-hour [6]	147	Same
Pb	3-month [1]	0.15	Same

Source: http://www.epa.gov/ttn/naaqs/criteria.html and 310 CMR 6.04
[1] Not to be exceeded.
[2] 98th percentile of one-hour daily maximum concentrations, averaged over three years.
[3] Not to be exceeded more than once per year.
[4] 99th percentile of one-hour daily maximum concentrations, averaged over three years.
[5] 98th percentile, averaged over three years.
[6] Annual fourth-highest daily maximum eight-hour concentration, averaged over three years.

Attainment with the NAAQS is based on data that is collected from a network of air monitoring sites across the country. The primary responsibility to ensure compliance with the NAAQS is assigned in the CAA to the individual states and any nonattainment areas require states to establish a State Implementation Plan (SIP) to reach compliance. The FAA is responsible for ensuring that airports' actions conform with SIPs, which is also known as General Conformity (Title

40 CRF Part 93). The general conformity rules only apply to areas that have been deemed to be in nonattainment or in maintenance (i.e., areas that were formally in nonattainment but have been in attainment for a period of 10 to 20 years).

Although not considered a criteria air pollutant in terms of having an air quality standard protective of human or welfare effects, carbon dioxide (CO_2) is considered a greenhouse gas and analysis of CO_2 emissions is required. This assessment is presented in Section 5.7 Climate and Greenhouse Gas Emissions.

5.6.2 Attainment Status and Conformity

The EPA is required to publish a list of the geographic areas that are either not in compliance or in compliance with the NAAQS (Section 107 of the 1977 CAA Amendments). The attainment status for Barnstable County is shown in **Table 5.6-2**. As the Table shows, all of Massachusetts is in attainment of all the NAAQS; therefore, the General Conformity regulations do not apply to Barnstable County.

Table 5.6-2 Attainment Status for Barnstable County

Pollutant	Attainment Status
NO_2 (1-hour and annual)	Unclassifiable/Attainment
SO_2 (1-hr)	Unclassifiable/Attainment
PM-2.5	Unclassifiable/Attainment (2012)
PM-10 (24-hour)	Unclassifiable/Attainment
CO (1 and 8-hour)	Unclassifiable/Attainment
Ozone (8-hour)	Unclassifiable/Attainment (2015)
Pb (rolling 3-month)	Unclassifiable/Attainment

Source: 40 CFR 81.322, EPA's Green Book, and Massachusetts 2021 Air Quality Report

5.6.3 Background Air Quality

To estimate background pollutant levels representative of the area, the most recent US EPA design values[2] were obtained for 2019 to 2021 for the criteria pollutants. The closest and most representative monitoring station for which data are available for all air pollutants is generally selected. The monitoring station at Harrison Avenue in Boston was selected for this Project. This station is located in an urban area near major roads so would be considered a conservative estimate of background air concentrations.

Table 5.6-3 presents the background air quality concentrations for all the criteria air pollutants.

[2] Air Quality Design Values | US EPA. A design value is reported by US EPA in the correct format for comparison with the NAAQS.

Table 5.6-3 Observed Ambient Air Quality Concentrations and Background Levels

Pollutant	Averaging Time	Background Concentration (µg/m³)	NAAQS	Percent of NAAQS
NO_2 (1)	1-Hour	84.6	188	45%
	Annual	18.8	100	19%
SO_2(2)	1-Hour	5.2	196	3%
$PM_{2.5}$	24-Hour (3)	15	35	43%
	Annual (3)	6.2	12	52%
PM_{10}	Max 24-hr	28	150	19%
CO (4)	1-Hour	1833.6	40000	5%
	8-Hour	1260.6	10000	13%
Ozone(5)	8-Hour	119.7	147.0	81%
Pb	Max 24-hr	0.003	0.15	2%

Notes:
From Air Quality Design Values | US EPA. or EPA's AirData Website
NO_2 concentrations are reported in ppb. Converted to µg/m³ using factor of 1 ppb = 1.88 µg/m³.
SO_2 reported ppb. Converted to µg/m³ using factor of 1 ppb = 2.62 µg/m³.
Background level is the average concentration of the three years.
CO is reported in ppm. 1 ppm = 1150 µg/m³.
O_3 reported in ppm. Converted to µg/m³ using factor of 1 ppm = 1963 µg/m³.

As shown in **Table 5.6-3**, the air quality at background air quality is generally very good even in urban areas with high traffic volumes, with air concentrations that are well below the current NAAQS. Emission sources from airport operations include aircraft, auxiliary power units, ground support equipment, stationary/area sources, ground access vehicles, and construction. Criteria air pollutants and GHGs are primarily emitted from the burning of fossil fuels. As noted above, the FAA has established significance thresholds to serve as indicators of what constitutes a significant impact.[3] For air quality, the significance threshold is any action that would result in criteria air pollutant concentrations that would lead to an exceedance of the NAAQS or increase the severity of any existing exceedance.

5.7 Climate Resiliency and Greenhouse Gas Emissions (MEPA/NEPA)

A variety of GHG emission sources are associated with the operations at the Airport. GHG emissions are linked to equipment and energy use owned by the Airport and with equipment that is operated by its tenants and the general public. Airport-owned sources of emissions include ground service equipment, fleet vehicles, parking lots, buildings, and stationary sources such as emergency generators. Tenant emissions are associated with the operation of the aircraft, ground service equipment, and fleet vehicles. Emissions associated with the general public include vehicle travel to and from the Airport.

Emissions from Airport buildings are associated with electricity consumption and fuel consumption. Lighting, plug loads, fans, and pumps are all examples of building equipment that consume electricity. Kitchen equipment and boilers for space heating and water heating are sources of fuel combustion. In 2017, the Cape Cod Commission estimated that aviation activity to

[3] FAA Order 1050.1F

and from Barnstable County (inclusive of Cape Cod Gateway, Chatham, and Provincetown municipal airports as well as Joint Base Cape Cod) results in 19,614 MTCO2E annually.[4] Of this, the Airport accounted for 11,700 MTCO2E in 2019, or 59.7%. Overall, within the transportation sector, aviation accounts for only 0.1% of air emissions on Cape Cod.

The Airport is committed to energy conservation and over the years has invested in several improvements to promote energy conservation and efficiency at the Airport:

- Maintains two solar fields (24,640 solar panels in total) on the northern side of the Airport property, occupying approximately 25 acres of Airport property and the adjacent Fire District property. The solar fields generate approximately 6.7 megawatts (direct current or DC) of energy and are estimated to offset more than 5,000 metric tons of CO2 emissions annually;
- Upgraded Airport street and parking lot lights to LED using Cape Light Compact's lighting program;
- Has installed electric vehicle charging stations in three parking lot locations;
- Worked with Cape Air to install roof mounted solar arrays on two leased hangars; and
- Has purchased electric, solar and propane mowing equipment.

Additionally, the Airport has initiated the development of a smart microgrid in conjunction with the Cape Cod Transit Authority (CCTA) and MassDOT Aeronautics Division to provide an instantaneous and dependable supplementary source of power. Microgrids are a purpose-built local electrical system that can operate either in parallel with or separate from the utility, providing their own generation and load balancing to achieve stable operations. They integrate several different local generation resources as well as some type of energy storage to allow for flexibility in peak conditions. The development of this microgrid will enhance the Airport's ability to set new airport standards for resiliency and sustainable energy.

5.7.1 Resilient MA Action Team (RMAT) Tool (MEPA)

The Executive Office of Energy and Environmental Affairs (EEA) and the Massachusetts Emergency Management Agency (MEMA) lead the Resilient MA Action Team (RMAT), an inter-agency team comprised of Climate Change Coordinators from each Secretariat who are supported by agency staff, stakeholders, and subject matter experts.

The RMAT is tasked with monitoring and tracking the State Hazard Mitigation and Climate Adaptation Plan (SHMCAP) implementation process, making recommendations to, and supporting agencies on plan updates, and facilitating coordination across state government and with stakeholders. The SHMCAP (2018) notes, relative to the aviation sector, that "high

[4] Cape Cod Regional Greenhouse Gas Inventory, 2017 Baseline. February 2021. Cape Cod Commission.

temperatures may also impact airplane operations. If the length of existing runways is not sufficient under higher temperature conditions, planes may not be able to take off when there is less lift available (MassDOT, 2017).[5]

5.7.1.1 RMAT Tool Outputs

Consistent with the MEPA Protocol for Analysis of Impacts on Environmental Justice Populations[6], the Airport has entered information on the Proposed Project, the Project site, and construction schedules, into the Design Standards Tool (the "RMAT Tool"), which was attached the ENF (RMAT report submitted on June 1, 2022).

MEPA policy notes that the RMAT Tool may indicate a "High" risk rating for certain weather related events (sea level rise/storm surge or extreme precipitation (urban or riverine flooding) as applied to the project location). RMAT tool "High" risk ratings could be an indicator of elevated climate risks for EJ populations that immediately surround the Project site (meaning all EJ populations located in whole or in part within the Project boundaries). However, MEPA guidance notes that the risk rating for the "extreme heat" parameter should not be used as a definitive indicator of elevated climate risks.

The Airport reviewed the output report generated from the RMAT Tool (see **Appendix G**) to identify whether the climate parameters for sea level rise/storm surge and extreme precipitation (urban or riverine flooding), ranked "High," would affect the applicable EJ population(s). (See **Table 5.7-1**).

Table 5.7-1 RMAT Tool - Asset Preliminary Climate Risk Rating

	Sea Level Rise/Storm Surge	Extreme Precipitation - Urban Flooding	Extreme Precipitation - Riverine Flooding	Extreme Heat
Runways and Taxiways	Low Risk	High Risk	High Risk	High Risk
Terminal Building	Low Risk	High Risk	High Risk	High Risk
Hangar Development Areas	Low Risk	High Risk	High Risk	High Risk

RMAT Tool Output Considerations

To properly understand RMAT Tool outputs and ratings, and to apply information from RMAT to the Proposed Project, the following limitations of the RMAT tool is noted in the interpretation of results:

Climate projections and GIS datasets used in the RMAT tool are based on the published data available for the region at this time. Climate projections provided by others and underlying

[5] High temperatures and dense air conditions could lead to increased runway length requirements for aircraft due to diminished performance in such conditions (Resilient MA, 2018). Moreover, heat can soften the asphalt of airport runways, impairing airplane movement (page. 4-168).

[6] www.mass.gov/doc/final-mepa-interim-protocol-for-analysis-of-project-impacts-on-environmental-justice-populations-effective-date-of-january-1-2022/download

assumptions and uncertainties have not been independently reviewed by the project team that developed the Climate Resilience Design Standards and Guidance. The limitations provided in the GIS datasets and climate projections by others also apply to the Tool.

Actual climate conditions will vary and may be more or less extreme than the projections used for the Climate Resilience Design Standards Tool. The Commonwealth of Massachusetts plans to update their climate projections at least every five years through the State Hazard Mitigation and Climate Adaptation Plan process.

Statewide hydrologic flood models have not been developed to predict riverine flood exposure. The methodology used by the RMAT tool does not distinguish between near-term and longer-term riverine flood risks. Waterbodies MassGIS hydrography/DEP wetlands site are not explicitly categorized as coastal/inland or major/minor. Current RMAT tool methodology does not identify projects/areas that may experience combined flood exposure from both riverine and coastal flooding, which may affect exposure as well the recommended Climate Resilience Design Standards.

The user inputs are subject to unintentional misrepresentation of conditions. The GIS datasets queried are based on the extent of the polygon and useful life of asset(s) as provided by the user.

The Preliminary Climate Exposure and Risk Screening outputs are not intended for final opinions for site suitability, regional coordination, capital planning, permitting and/or construction and should continue to be vetted with site-specific information, updated climate projections, design alternatives, and regulatory requirements. Within the limitations of scope, schedule, and budget, the relationships informing the Preliminary Climate Exposure and Risk Screening outputs have been executed in accordance with the generally accepted practices in this area at this time based on iterative stakeholder feedback. No warranty, expressed or implied, is given.

Potential Project Exposure

Sea Level Rise/Storm Surge: The Project received a "High Exposure" because of the following: Increased impervious area; Maximum annual daily rainfall exceeds 10 inches within the overall project's useful life. However, the model noted no historic flooding at the Project Site and existing impervious area of the Project Site is between 10% and 50% - an expected value based on the use as an air transportation facility.

Extreme Precipitation - Urban Flooding: The Project received a "High Exposure" because of the following: Increased impervious area, Maximum annual daily rainfall exceeds 10 inches within the overall project's useful life. However, the model outputs noted no historic flooding at Project Site and existing impervious area of the Project Site is between 10% and 50%.

Extreme Precipitation - Riverine Flooding: The Project received a "High Exposure" because of the following: Part of the Project is within a mapped FEMA floodplain, outside of the Massachusetts Coast Flood Risk Model (MC-FRM)**,** Part of the Project is within 100ft of a waterbody, Project is potentially susceptible to riverine erosion**.** However, no historic riverine flooding at the Project Site was noted.

Extreme Heat - The Project received a "High Exposure" because of the following: Increased impervious area, existing trees are being removed as part of the proposed Project, existing impervious area of the Project Site is between 10% and 50%, 10 to 30 day increase in days over 90 degrees F within Project's useful life and location within 100 ft of existing water body. However, MEPA guidance notes that the risk rating for the "extreme heat" parameter should not be used as a definitive indicator of elevated climate risks.

Project Related Climate Benefits

Aspects of the Project may reduce climate risks, these include measures such as improvements to stormwater management systems, use of onsite energy generation/storage via a microgrid, and use "green" construction standards for airport tenants. These measures respond to the RMAT Tool analysis output for anticipated climate change effects. Additionally, the proposed Project is consistent with, and responds to future climate scenarios (e.g., heat impacts) by adding runway length to maintain safe aircraft operations.

As described above, within the SHMCAP (2018) "high temperatures may also impact airplane operations. If the length of existing runways is not sufficient under higher temperature conditions, planes may not be able to take off when there is less lift available [and] high temperatures and dense air conditions could lead to increased runway length requirements for aircraft due to diminished performance in such conditions."

Further analysis of the RMAT Tool estimated risk ratings for climate parameters (e.g., temperature, precipitation) does not indicate an elevated climate risks for EJ populations within the DGA for the Project Site. Mitigation and minimization measures to Project impacts are discussed in Chapter 7.0 and are anticipated to adequately address potential future climate conditions.

5.8 Natural Resources and Energy Supply (NEPA)

Under FAA Order 1050.1F, the natural resources and energy section provides information relative to the Project's consumption of natural resources (such as water) and use of energy supplies (such electricity). Consumption of natural resources and use of energy supplies may result from construction, operation, and/or maintenance of the Proposed Action or Alternative(s).

To adequately describe the existing conditions for natural resources and energy supply within the Project area, this EA/EIR provides the following information:

The suppliers of energy resources found in the area such as power plants, water utilities, sewage disposal utilities, and suppliers of natural gas and petroleum; and

The resources a project would use in the construction, operation, and maintenance of a project and identify where the suppliers are located.

Barnstable Water Company serves the Airport. Effluent from each building's sanitary system flows into the Town of Barnstable's sanitary sewer system via a four-inch or eight-inch pipe connected to the Airport. The effluent from the kitchen area of the café flows through one of the laterals and into a 1,000-gallon grease trap before flowing into the sanitary system. At the time of document preparation, there was no active use of the kitchen within the terminal building.

The Airport's electricity needs are provided by Eversource. The Airport also has backup generators for the terminal building as well as for the airfield should power ever go out. The closest power plant is Canal Station, located on the Cape Cod Canal in Sandwich. Canal Station operates a 350 megawatt (MW) dual-fueled (natural gas and diesel) generation station which provides power during peak need. Vineyard Wind 1, the nation's first utility-scale offshore wind energy project is currently under construction offshore of Martha's Vineyard and will produce 800 MW of power to be brought onshore in Barnstable at Covell's Cove. Once this project is brought online, it will be transmitted via ISO New England.

Energy consumption at the Airport consists predominantly of electricity and fuel for aircraft and ground vehicles and lighting along runways and taxiways, approach lighting systems, ramp lighting, terminal facilities, hangar buildings, air traffic control tower, roadway, and parking lot lighting. The Airport's current energy conservation commitments are discussed above in Section 5.7. The Airport continues to seek projects that encourage energy conservation and the use of renewable sources such as the smart microgrid project discussed in Section 5.7.

5.9 Noise (MEPA/NEPA)

This sound level assessment includes computer modeling to predict future sound levels from the Project as well as a comparison to existing sound levels and FAA land use compatibility. Potential noise receptors include residential developments in all directions of the Airport – including the towns of Barnstable, Cummaquid, Yarmouth, West Yarmouth, Hyannis, and Centerville; commercial facilities directly adjacent to the Airport – including shopping centers, auto dealerships, restaurants, corporate buildings; and the Hyannis Ponds Wildlife Management Area, a state forest with associated trails to the north.

A Federal Aviation Regulations (FAR) Part 150 Noise Study was prepared for the Airport in 1987 and approved by FAA in 1989. The study was updated in 1998-99, resulting in additional practices being adopted. These studies presented an analysis of existing and future noise levels both at the Airport and in the vicinity thereof resulting from aircraft operations. It also provided suggestions that, when implemented, would help to reduce noise impacts. These suggestions are currently in effect as voluntary noise abatement flight procedures. These procedures are for use in visual flight rule (VFR) weather conditions. These procedures (1) indicate priority runway use for noise abatement; (2) identify known noise sensitive areas in the vicinity of the Airport; and (3) provide optimum noise abatement arrival and departure paths for each runway. These are to be followed unless otherwise directed by ATC, or unless, in the pilot's judgment, safety of the flight will be compromised.

At the Airport, pilots are educated in these procedures via a handout and via airfield signage. These procedures are also available on the Airport's website at https://flyhya.com/pilot-info/noise-abatement/. The Airport has established voluntary quiet hours between 10 p.m. and 6 a.m. During

these times, airlines and general aviation operators are encouraged to limit their flights so that citizens in neighboring communities are not disturbed during normal sleeping hours. Also, training, touch-and-go and certification flights are prohibited without approval of the airport management.

5.9.1 FAA Land Use Compatibility

The Project is subject to the guidelines for land use compatibility adopted by the FAA. Code of Federal Regulations, Title 14, Part 150 provides the FAA's recommended guidelines for determining noise/land use compatibility. Airport-compatible land uses are defined as those uses that can coexist with a nearby airport without constraining the safe and efficient operation of the airport or exposing people living or working nearby to potential negative environmental or safety impacts. According to these FAA guidelines, all identified land uses, including residential areas, are compatible with aircraft noise at DNL levels below 65 dB. Commercial land use areas are compatible with DNL levels below 70 dB.

5.9.2 Existing Noise Conditions

The existing noise environment surrounding the Airport has been documented through noise exposure maps. The noise exposure maps (NEMs) include annual day-night average (DNL) sound level contours computed used the FAA's Aviation Environment Design Tool (AEDT) for aircraft flights using operations data from 2019 to establish existing conditions DNL contours. The results of this noise assessment for the 2019 existing conditions are described below. Utilizing 2019 data for the baseline noise analysis is a conservative approach as the operations numbers were approximately 50% more than the number of operations in 2022 (34,190).

The FAA's AEDT was used to generate the DNL noise contours for the 2019 Existing Condition. Input data required for the AEDT noise model includes the following: aircraft fleet mix, runway geometry, runway utilization, the number and type of aircraft operations (departures and arrivals) by aircraft type, and the number of daytime (7 am to 10 pm) and nighttime (10 pm to 7 am) aircraft operations for a typical average annual day at the Airport.

5.9.2.1 Noise Model Inputs

Total operations for 2019 for all aircraft categories were 67,350. Of these, 6,203 were Touch and Go, accounting for 9.2% of Aircraft operations. Aircraft operations were broken down into the following categories: Single Engine (Piston), Jet, Turbo prop, Helicopter, and General Aviation Touch & Go aircraft. All the touch & go operations occur during the daytime period. **Table 5.9-1** summarizes the Airport's average annual daytime and nighttime operations by aircraft type for the 2019 Existing Condition. Also included in **Table 5.9-1** is the AEDT aircraft code used for each aircraft type in the AEDT model. The noise model input also includes a breakdown by arrival and departure by runway (not shown here for brevity). See **Appendix H** for all operations data included in the noise model.

Table 5.9-1 2019 Existing Conditions Operations Data

Aircraft	AEDT Code	Aircraft Type	Ann Ops	Daily op	Day Op	Night Op
Generic Single	C172	Piston	5,712	15.65	14.62	1.03
Piper Cherokee (PA28)	P28A	Piston	1,433	3.93	3.67	0.26
Cirrus SR22	SR22	Piston	1,270	3.48	3.25	0.23
Piper Navajo	PA31	Piston	9,136	25.03	23.38	1.65
Pilatus PC-12	PC12	Turboprop	1,119	3.07	2.86	0.20
Cessna 402 Businessliner	C402	Piston	26,274	71.98	67.23	4.75
Cessna 414 Chancellor	C414	Piston	889	2.44	2.27	0.16
Beechcraft Super King Air	BE30	Piston	9,021	24.72	23.08	1.63
Cessna Citation Excel	C56X	Jet	1,270	3.48	3.25	0.23
Cessna Citation Sovereign	C680	Jet	1,105	3.03	2.83	0.20
Technam P2012 Traveller	P212	Piston	268	0.73	0.69	0.05
Hawker 800	H25B	Jet	319	0.87	0.82	0.06
Learjet 45	LJ45	Jet	607	1.66	1.55	0.11
Bombardier Challenger 300	CL30	Jet	1,135	3.11	2.90	0.21
Bombardier Challenger 600	CL60	Jet	390	1.07	1.00	0.07
Embraer 190	E190	Jet	184	0.50	0.47	0.03
Gulfstream 4	GLF4	Jet	271	0.74	0.69	0.05
Gulfstream 5	GLF5	Jet	120	0.33	0.31	0.02
Bombardier Global Express	GLEX	Jet	156	0.43	0.40	0.03
Eurocopter EC 145	EC45	Helicopter	234	0.64	0.60	0.04
Sikorsky S-76	S76	Helicopter	234	0.64	0.60	0.04
Total			**61,147**			
Touch and Go			**6,203**			
Total Operations			**67,350**			

Runway utilization is a major part of AEDT modeling. At Cape Cod Gateway Airport, aircraft operations are proportionally distributed to each of the four runways. Approximately 55.4% of aircraft departure and arrival operations occur from Runways 6 and 24 and 44.6% from Runways 15 and 33. Nighttime operations total 6.6% of total operations. Touch & Go aircraft operations are similarly distributed on runways **Table 5.9-2** summarizes runway utilization for the 2019 Existing Condition used in the noise modeling analysis.

Table 5.9-2 2019 Runway Utilization

Runway 15	Runway 33	Runway 6	Runway 24
19.9%	24.7%	18.0%	37.4%

5.9.2.2 Day Night Average Sound Level Results

Using the aircraft data shown in **Table 5.9-1**, DNL noise contours were generated using the AEDT noise model for the 2019 Existing Condition at the Airport. These numbers are reflective of current post-COVID conditions, if not more conservative as operations numbers remain lower post-COVID. The 70, 65, and 60 DNL noise contours are shown in **Figure 5.9-1**. Overlaying the DNL noise contours onto a base map of the area surrounding the Airport, a determination of overall noise exposure was made based on aircraft operations. FAA guidelines indicate that all land uses are normally compatible with DNL noise levels less than 65 dBA.

Based on the 2019 noise contours, the 70 and 75 dBA DNL contours are entirely within the Airport property. The 65 dBA contour slightly extends into commercial land use east of Yarmouth Road. **Figure 5.9-1** shows that the 65 dBA DNL sound contour generally falls within the airport property, extending just beyond the property to the east near Yarmouth Road. These commercial facilities are all below a DNL of 70 dBA, which is the noise compatibility threshold of commercial land uses. These results indicate that the existing condition of land use surrounding the Airport is noise compatible. All residences are exposed to noise levels below a DNL of 65 dBA and all commercial facilities are below a DNL of 70 dBA as described by the FAA's Order 1050.1F.

5.10 Biological Resources (Fish, Wildlife, and Plants)

Biological resources include terrestrial and aquatic plant and animal species; game and non-game species; special status species (state or federally listed threatened or endangered species, marine mammals, or species of concern, such as species proposed for listing or migratory birds); and environmentally sensitive or critical habitats. Wildlife species have specific habitat requirements, such that the distribution and abundance of each species are limited by the quality and quantity of available habitat in a given area.

The study area for biological resources affected by the Project focuses on the individual Project Sites and the entire Airport. Where relevant, areas outside of the Airport's property boundaries are discussed. Certain undeveloped portions of the Airport provide suitable habitat for a number of plant and wildlife species common to Massachusetts.

5.10.1 Threatened and endangered species

5.10.1.1 Federally protected species and critical habitat

Federally listed species identified near the Project area via IPaC include one animal, Northern Long Eared Bat (*Myoptis septentrionalis,* NLEB) and two plants, American chaffseed (*Schwalbea americana)* and sandplain gerardia (*Agalinis acuta*). The U.S. Fish and Wildlife Service (USFWS) has not identified critical habitat for these species. Neither of these species is listed by the

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

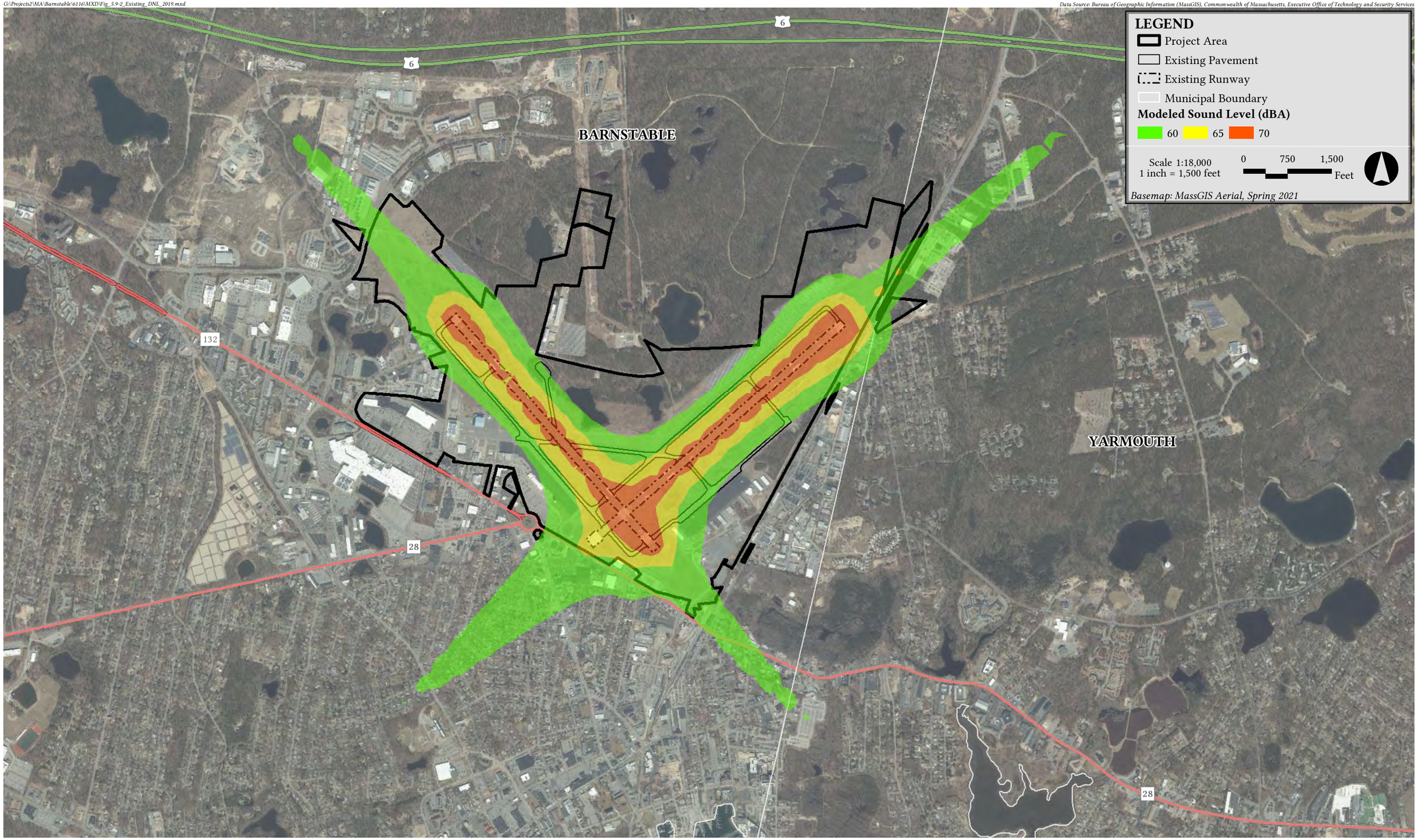

Figure 5.9-1
Existing Aircraft Only Annual Day Night Level (2019)

Massachusetts Natural Heritage and Endangered Species Program (NHESP) as within the Project area. Additionally, the USFWS identifies bald eagles, protected by the Bald and Golden Eagle Protection Act as present in the Project area.

According to NHESP mapped data (June 12, 2019), two known maternity roost trees for NLEB are located in Sandwich and several in Eastham. No known hibernacula are documented on Cape Cod. American chaffseed is found in sandplain grasslands in open sunny plant communities. There is only one known population in one location in Barnstable County. A review of the USFWS Critical Habitat for Threatened & Endangered Species Map revealed no critical habitats within the Project area. A species list via USFWS IPac is provided in **Appendix I**.

The NLEB range includes much of the eastern and north central United States and all Canadian provinces from the Atlantic Ocean west to the southern Yukon Territory and eastern British Columbia. NLEB spend winter hibernating in caves and mines called hibernacula. They use areas in various sized caves or mines with constant temperatures, high humidity, and no air currents. During the summer, NLEB roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and dead trees (snags). Northern long-eared bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. The majority of active airfields are generally free of forest stands and thus lacks summer tree roosting habitat. However, portions of the project area proposed for development (East Ramp), or obstruction removal (north of Taxiway D) may have trees suitable for roosting and surveys would need to be implemented during the permitting phase of these projects to ascertain if bats are present.

5.10.1.2 State protected species and priority habitat

According to the Massachusetts Natural Heritage Atlas (15th Edition, August 1, 2021), areas north and northwest of the Airport contain mapped Estimated Habitat of Rare Wildlife (EH) and Priority Habitats of Rare Species (PH) including Mary Dunn Pond (EH 276 and PH 278), Lewis Pond (PH273), Lamson Pond (PH294), and northwest of Taxiway A off Airport Road (PH 274). Several Potential Vernal Pools (PVPs) are located south of Lamson Pond, south of Mary Dunn Pond, and one Certified Vernal Pool is located just west of Mary Dunn Pond (CVP 4695). Mary Dunn Pond is also identified as a state-imperiled Coastal Plain Pond Shore community. These vernal pool areas are outside the proposed Projects' limits of disturbance. Refer **Figure 5.10-1** for NHESP mapped areas.

5.10.2 Wildlife

Airport property supports habitat for many common mammal species found throughout southeastern Massachusetts as shown in **Table 5.10-1**.

Table 5.10-1 Common Mammal Species found at Cape Cod Gateway Airport

Common Name	Scientific Name.
coyote	*Canis latrans*
gray fox	*Urocyon cinreoargenteus*
red fox	*Vulpes vulpes*
white-tailed deer	*Odocoileus virginianus*
Virginia opossum	*Didelphis virginiana*
eastern gray squirrel	*Sciurus carolinensis*
woodchuck	*Marmota monax*
eastern chipmunk	*Tamias striatus*
meadow vole,	*Microtus pennsylvanicus*
common muskrat,	*Ondatra zibethicus*
white-footed deermouse	*Peromyscus leucopus*
cottontail	*Sylvilagus spp.*
shrew	*Sorex spp,*
fisher	*Martes pennanti*
American mink	*Neovison vison*
striped skunk	*Mephitis mephitis*
racoon	*Procyon lotor*
bat	*Eptesicus sp*

The Airport supports habitat for many bird species, both resident and migratory. The IPaC report (**Appendix I**) identifies several birds that are protected under the Migratory Birds Treaty Act of 1918 and/or the Bald Eagle and Golden Eagle Protection Act of 1940. The USFWS has identified migratory bird species at the Airport that are of particular concern either because they are on the USFWS Birds of Conservation Concern (USFWS 2021) or otherwise warrant special attention in the region (New England/Mid-Atlantic Coast) and at the Airport. These include several shoreline or coastal bird species, as well as woodland species listed in **Table 5.10-2**.

Table 5.10-2 Migratory Bird Species at Cape Cod Gateway Airport

Common Name	Scientific Name
American Oystercatcher	Haematopus palliatus palliates
Bald Eagle	Haliaeetus leucocephalus*
Black Skimmer	Rynchops niger
Black-Billed Cuckoo	Coccyzus erythropthalmus
Blue-winged warbler	Vermivora pinus
Bobolink	Dolichonyx oryzivorus
Canada Warbler	Wilsonia canadensis
Chimney Swift	Chaetura pelagica
Hudsonian godwit	Limosa haemastica
King rail	Rallus elegans
Lesser Yellowlegs	Tringa flavipes
Long-eared Owl	Asio otus*
Prairie Warbler	Dendroica discolor

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

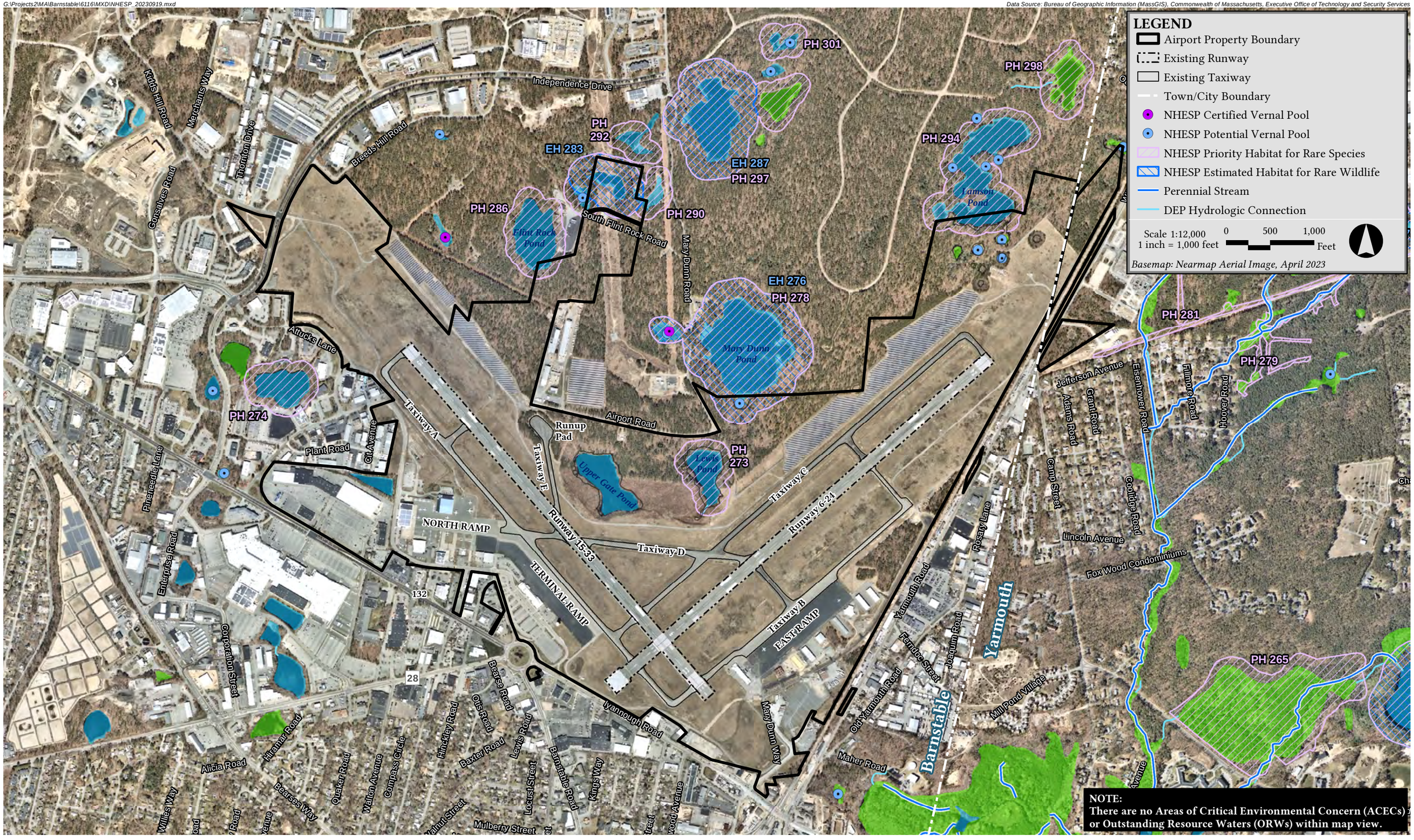

Figure 5.10-1
NHESP Habitat

Table 5.10-2 Migratory Bird Species at Cape Cod Gateway Airport (Continued)

Common Name	Scientific Name
Purple Sandpiper	Calidris maritima aritima/belcheri
Ruddy Turnstone	Arenaria interpres
Rusty Blackbird	Euphagus carolinus
Short-billed Dowitcher	Limnodromus griseus
Willet	Tringa semipalmata
Wood thrush	Hylocichla mustelina

While not on the IPaC report, the Osprey (*Pandion haliaetus*), a regular resident at the Airport, as well as mallard duck (*Anas platyrhynchos*) and Canada goose (*Branta canadensis*) are regularly observed at the Airport and in the ponds. Conversely, the IPaC report includes other avian species that are rare or may be only casual migrants to the region, that rarely nest on Cape Cod, such as the Black Skimmer.

5.10.3 Potential Vernal Pool Habitat/Aquatic Habitat

Multiple ponds on the Airport property have been mapped by NHESP as potential or certified vernal pools (see **Figure 5.10-1**). Prior studies (Baystate Environmental, 2002, Horsely Witten Group, 2005) have identified fish within Upper Gate Pond, and as such, this pond does not meet vernal pool criteria according to the Guidelines for Certification of Vernal Pool Habitat by the Massachusetts Division of Fisheries and Wildlife. The other identified ponds are outside of the Project site limits and will not be affected by the Project.

5.10.4 Vegetation

Vegetated communities at the Airport primarily consist of open grassy areas and forested areas, predominantly upland communities, with wetland communities associated with the various ponds. The grassy areas are maintained and consist largely of grasses and other herbaceous and low growing woody species. The community supports a relatively dense understory of black huckleberry (*Gaylussacia baccata*) and dangleberry (*Gaylussacia frondosa*). Species observed at the Airport during surveys conducted by Airport consultants are identified in **Table 5.10-3** below.

Forested communities are located to the north of the intersection of the two runways along the north side of the airfield, east of the 24-end, and along the eastern limits of Mary Dunn Way, east of the North Ramp. The forest community is a pitch pine-oak community, 60 % canopy with tallest trees (pitch pine - *Pinus rigidus*) approximately 35-40 feet high. A forested fringe is located along the southeast Airport boundary, in between the roadway and the train tracks. Often dense entanglements of common greenbrier (*Smilax rotundifolia*) and/or cat greenbrier (*Smilax glauca*) are located throughout the upland plant communities.

Table 5.10-3 Common Plant Species found at the Airport

Habitat	Common Name	Scientific Name
Grassland	Little bluestem	Schizachyrium scoparius
	Broom sedge	Andropogon virginicus
	Creeping juniper	Juniperus horizontalis
	Common dewberry	Rubus flaggellaris
	Pearly everlasting	Anaphalis margaritacea
	Pitch pine (seedlings)	Pinus rigida
	Lichens	Cladonia spp.
	Common hawkweed	Hieracium vulgatum
	Purple headed sneezeweed	Hieracium nudiflorum
	Asters	Aster spp.
	Bearberry	Arctostaphylos uva-ursi
	Wild indigo	Baptista tinctoria
	Rabbit's foot clover	Trifolium arvense
	Bush clover	Lespedeza capitata
	Rockrose	Crocanthemum sp.
	Pineweed	Hypericum gentianoides
	Pennsylvania sedge	Carex pensylvanica
	Little ladies' tresses	Spiranthes tuberosa
	Tick trefoil	Desmodium nudiflorum
	Spreading dogbane	Apocynum androsaemifoliuim
Forested Areas	Pitch pine	Pinus rigida
	White oak	Quercus alba
	Scarlet oak	Quercus coccinea
	Black oak	Quercus velutina
	Eastern white pine	Pinus strobus
Forested Areas Shrub Areas	Sassafras	Sassafras albidum
	Eastern red cedar	Juniperus virginiana
	Black cherry	Prunus serotina
	Arrowwood	Viburnum dentatum
	Highbush blueberry	Vaccinium corymbosum
	Inkberry	Ilex glabra
	Sweet pepperbush	Clethra alnifolia
	Nannyberry	Viburnum lentago
	Northern bayberry	Morella pensylvanica
	Black chokeberry	Aronia melanocarpa)
	Scrub oak	Quercus ilicifolia
Groundcover	Wild sarsaparilla	Aralia nudicaulis
	Bracken fern	Pteridium aquilinum
	Wintergreen	Gaultheria procumbens
	Pennsylvania sedge	Carex pensylanica

5.10.4.1 Runway Visibility Zone Vegetation Management

The Runway Visibility Zone (RVZ), defined by FAA as an area formed by imaginary lines connecting the two runways' visibility points, requires an area of maintained vegetation designed to facilitate runway line of sight between intersecting runways. This line of sight enables coordination between aircraft and between aircraft and vehicles that are operating on active runways. In 2015, the Airport permitted and implemented a major maintenance effort of the RVZ, cutting 20 acres of forest to bring the Airport into compliance with the FAA regulations. To remain compliant, the RVZ must remain clear. As the topography in this area is generally lower than the plain of the airfield, the Airport is able to maintain the RVZ as a low growing shrub community.

5.11 Transportation (MEPA)

Because the improvements to the airside, taxiway, and runway are primarily intended to provide stronger compliance with FAA airport safety standards and rehabilitation of existing infrastructure, they would not directly affect the Airport's level of airside or landside activity. Operational forecasts (see Section 1.4.2) indicate a modest increase in enplanements of commercial traffic (~4,000 enplanements increase over baseline by 2040) and general aviation passengers (~13,000 increase in passengers over baseline by 2040).

The baseline condition at the Airport, as presented in the Master Plan, indicates that the existing terminal, with approximately 30,000 sf, has a design capacity of approximately 100 passengers per peak hour. This section examines the transportation network serving the Airport and presents an evaluation of transportation impacts associated with the terminal expansion based on the estimated changes in landside vehicle trip activity at the Airport.

5.11.1 Existing Condition

This section presents the Airport's existing (2023) access, vehicle circulation, the condition of area roadways and key intersections, available traffic data, and public transit services.

5.11.1.1 Airport Vehicle Access and Circulation

The Airport and surrounding roadway network are shown in **Figure 5.11-1**.

5.11.1.1.1 Travel Routes

Automobiles related to airline passenger activity arrive at the Airport terminal primarily via the three roadway routes described below:

- From points northwest: Attucks Lane to Airport Road to Barnstable Road.
- From points east and northeast: Iyannough Road to Airport off-ramp southeast of the Rotary.
- From points west and south: Falmouth Road or Barnstable Road, through the Airport Rotary, to Hinckley Road.
- Automobiles exiting the Airport generally use the above routes in reverse. Most automobiles arriving at the terminal are dropping off passengers, parking, or returning rental cars.
- Access to and egress from the General Aviation facilities is provided on Mary Dunn Way, which is located approximately 500 feet northeast of the Iyannough Road (Route 28)/Yarmouth Road intersection. The Airport site also contains more than 40 local airport-related business tenants, generally located along Barnstable Road.

5.11.1.1.2 Parking

Three automobile parking areas are adjacent to the terminal building including the lot for passengers/public (585 spaces), the rental car lot (100 spaces), and the employee lot (50 usable spaces, 15 currently used for equipment storage). During periods of peak seasonal activity, an overflow parking area, with capacity for 400 vehicles, is available for use on Airport Road.

Additionally, the Airport owns the parking lot currently leased to the Steamship Authority. Current (2023) parking fees at the passenger lot are $0 for less than 30 minutes, $5 for over 30 minutes, and $1 for each additional hour. The daily and weekly rates are $11 and $70, respectively.

5.11.1.1.3 Passenger Pick-up/Drop-off

The one-way airport driveway in front of the terminal building has a right-side passenger drop-off lane adjacent to the building, one through travel lane, and a left side passenger pick-up lane, which also serves as a waiting area for taxis and transportation network company (TNC) vehicles, such as Lyft and Uber. Vehicles dropping off passengers can circulate back to the parking lot area or to the Airport exit. The estimated passenger breakdown by landside mode is as follows:

- Parking lots: 40 percent
- Pick-up/drop-off: 25 percent
- Taxis and transportation network companies (TNCs): 25 percent
- Rental cars: 10 percent

Table 5.11-1 illustrates the assumed breakdown of existing peak vehicle demand at the curb, dwell time assumptions, and passenger per vehicle assumptions. It is assumed that 50 percent of the peak hour demand will occur during the peak 20-minutes, representative of the peak conditions that occur before or after a flight. Curb front and landside elements should be planned for the peak 20-minute period.

Table 5.11-1 Peak Hour Vehicle Assumptions

	Existing Conditions Cars	Curb (LF)
Parking Lot		
Parking Lot	16	N/a
Parking Lot Peak 20 min	8	N/a
Curb Length		
Pick-up/ Drop-off Peak Hour	32	128
Curb Length		
Pick-up/ Drop-off Peak 20 min.	16	64
Taxis/TNC's Peak Hour	20	80
Taxis/TNC's Peak 20 min	10	40
Total Curb Peak Hour	52	208
Total Curb Peak 20 min	26	104
Exit Traffic	Vehicles Only, includes Parking and Rental Cars	
Total Exit Peak Hour	88	
Total Exit Peak 20 min	44	

Source: McFarland Johnson Analysis, 2020

5.11.1.2 Area Roadway Descriptions

Airport Road is an urban collector under the town of Barnstable jurisdiction generally running in a north-south direction between Barnstable Road to the north and Iyannough Road to the south. Airport Road is a two-way, two-lane roadway with a posted speed limit of 20 mph. No sidewalks nor bike lanes are provided on either side of the roadway and no crosswalks are provided at any intersection. On-street parking is not permitted along any side of the roadway.

Route 28/Iyannough Road is an urban principal arterial under MassDOT jurisdiction running in a in a southeast-northwest direction between Main Street to the northwest west and Main Street to the southeast. Within the study area, Iyannough Road is a two-way four-lane roadway with a posted speed limit of 35 mph. No sidewalks nor bike lanes are provided along the roadway and no crosswalks are provided at any intersections. On-street parking is not permitted along either side of the roadway.

Route 28/Falmouth Road is an urban principal arterial under MassDOT jurisdiction running in a northeast-southwest direction between Waquoit Highway to the southwest and the Airport Rotary to the northeast. Falmouth Road is generally a two-way, two-lane roadway with a posted speed limit of 25 mph within the study area.

Within the study area, no sidewalks are provided. Crosswalks are provided at some signalized intersections. Bike lanes are provided in both directions west of Walton Avenue. On-street parking is not permitted along either side of the roadway.

Barnstable Road is an urban principal arterial under the Town of Barnstable jurisdiction running in a north-south direction between Airport Road to the north and Ocean Street to the south. Barnstable Road is a two-way, two-lane roadway with a posted speed limit of 30 mph. Sidewalks are provided along both sides of the roadway with crosswalks provided at most signalized intersections. Bike lanes are not provided along either side of the roadway. On-street parking is not permitted along either side of the roadway.

Attucks Lane is a local roadway under the Town of Barnstable jurisdiction generally running in an east-west direction between Iyannough Road to the east and Airport Road to the west. Attucks Lane is a two-way, two-lane roadway with a posted speed limit of 35 mph. No sidewalks nor bike lanes are provided along either side of the roadway. Crosswalks are provided at some intersections. On-street parking is not permitted on either side of the roadway.

5.11.1.3 Area Intersection Descriptions

Airport Rotary is an unsignalized five-legged rotary with five approaches. The Iyannough Road eastbound approach consists of two entering lanes and two exiting lanes separated by a median. The Iyannough Road westbound approach consists of one entering lane and one exiting lane separated by a median. The Falmouth Road north eastbound approach consists of one entering lane and one exiting lane separated by a median. The Barnstable Road north-westbound approach consists of one entering lane and one exiting lane. The Barnstable Road south eastbound approach consists of one entering lane. All approaches are yield controlled. Sidewalks and crosswalks are not provided along any approach. On-street parking is not permitted along any approach.

Iyannough Road/Yarmouth Road is a four-legged signalized intersection with four approaches. The Iyannough Road eastbound approach consists of an exclusive left-turn lane with approximately 300 feet of storage, an exclusive through lane, and a shared through/right-turn lane. The Iyannough Road westbound approach consists of an exclusive through lane and a shared through/right-turn lane. Left turns are not permitted at this approach. The Yarmouth Road northbound approach consists of an exclusive left-turn lane with approximately 100 feet of

storage and a shared through/right-turn lane. The Yarmouth Road southbound approach consists of a shared left-turn/through lane and an exclusive right-turn lane with approximately 150 feet of storage. Sidewalks are provided along the northbound and southbound approaches. No crosswalks are provided across any approach. On-street parking is not permitted at any approach.

Attucks Lane/Iyannough Road is a three-legged signalized intersection with three approaches. The Iyannough Road eastbound approach consists of an exclusive left-turn lane with approximately 285 feet of storage and two exclusive through lanes. The Iyannough Road westbound approach consists of an exclusive U-turn lane with approximately 150 feet of storage, two exclusive through lanes, and a channelized right-turn. The Attucks Lane southbound approach consists of an exclusive left-turn lane with approximately 50 feet of storage and two exclusive right-turn lanes. Sidewalks are provided along the eastbound and southbound approaches with a crosswalk across the eastbound approach. On-street parking is not permitted along any approach.

5.11.1.4 Existing Traffic Volumes

An Automatic traffic recorder (ATR) is a device that continuously records the passage of vehicles, vehicle speed and classification, and direction of traffic flow. The MassDOT publishes traffic count data, including ATR data, on a Traffic Count Database System (TCDS) module. Year 2022 traffic data available for key locations near the Airport are summarized in **Table 5.11-2** and include Annual Average Daily Traffic (AADT) and the proportion of daily traffic occurring during the peak hour (K-factor, %).

Table 5.11-2 Average Daily Traffic Summary

Location/Direction	AADT	K Factor %
To/from points northwest		
Iyannough Road west of Phinneys Lane[1]		
Eastbound	13,404	10%
Westbound	14,001	9%
Total	27,405	8%
Attucks Lane west of Phinneys Lane[2]		
Eastbound	2,984	n/a
Westbound	2,767	n/a
Total	5,751	n/a
To/from points northeast		
Yarmouth Road/Willow Street south of Crowell Road[3]		
Northbound	11,619	10%
Southbound	12,382	10%
Total	24,001	9%

Table 5.11-2 Average Daily Traffic Summary (Continued)

Location/Direction	AADT	K Factor %
To/from points east/southeast		
Iyannough Road/Route 28 west of Main Street[4]		
Eastbound	6,873	n/a
Westbound	6,696	n/a
Total	13,569	n/a
To/from points west/southwest		
Falmouth Road south of Bearses Way[5]		
Northbound	10,921	9%
Southbound	10,187	9%
Total	21,108	8%

AADT Annual Average Daily Traffic; K Factor = Peak-hour Percentage

1. MassDOT Spot Location ID: S17-024-020-12
2. MassDOT Spot Location ID: RPA11-020-21019
3. MassDOT Spot Location ID: S17-024-351-20
4. MassDOT Spot Location ID:7136
5. MassDOT Spot Location ID: S17-021-020-15

5.11.1.5 Existing Public Transit

The Cape Cod Regional Transit Authority (CCRTA) operates 10 fixed routes within Barnstable County, covering all 15 Cape Cod towns. In the vicinity of the Airport, the CCRTA operates five fixed routes, including the Barnstable Villager which serves Hyannis, West Barnstable, and Barnstable with stops at the Cape Cod Gateway Airport. The Airport is also within a mile of the Hyannis Transportation Center (HTC), which provides access to CCRTA buses, intercity buses, and access to the CapeFLYER, a weekend train service that operates during the summer from South Boston to Hyannis. **Table 5.11-3** provides a summary of the routes and a map of the public transit services within the study area is shown in **Figure 5.11-2**.

Table 5.11-3 Existing Public Transit Services

Transit Service	Description	Peak Headway[1]
Train Service		
CapeFLYER[2]	South Station – Hyannis	-
Bus Routes		
Sealine	HTC – Woods Hole (Steamship Authority) docks via Route 28	60
H20 Hyannis – Orleans	Downtown Hyannis – Orleans Center via Route 28 and Route 39	60
Barnstable Villager	Downtown Hyannis – Barnstable Courthouse via Route 132 and Route 6A	60
Hyannis Crosstown	Downtown Hyannis – Local/Popular Hyannis Locations	60
FLEX[3]	Route 28 in Harwich – Provincetown	60

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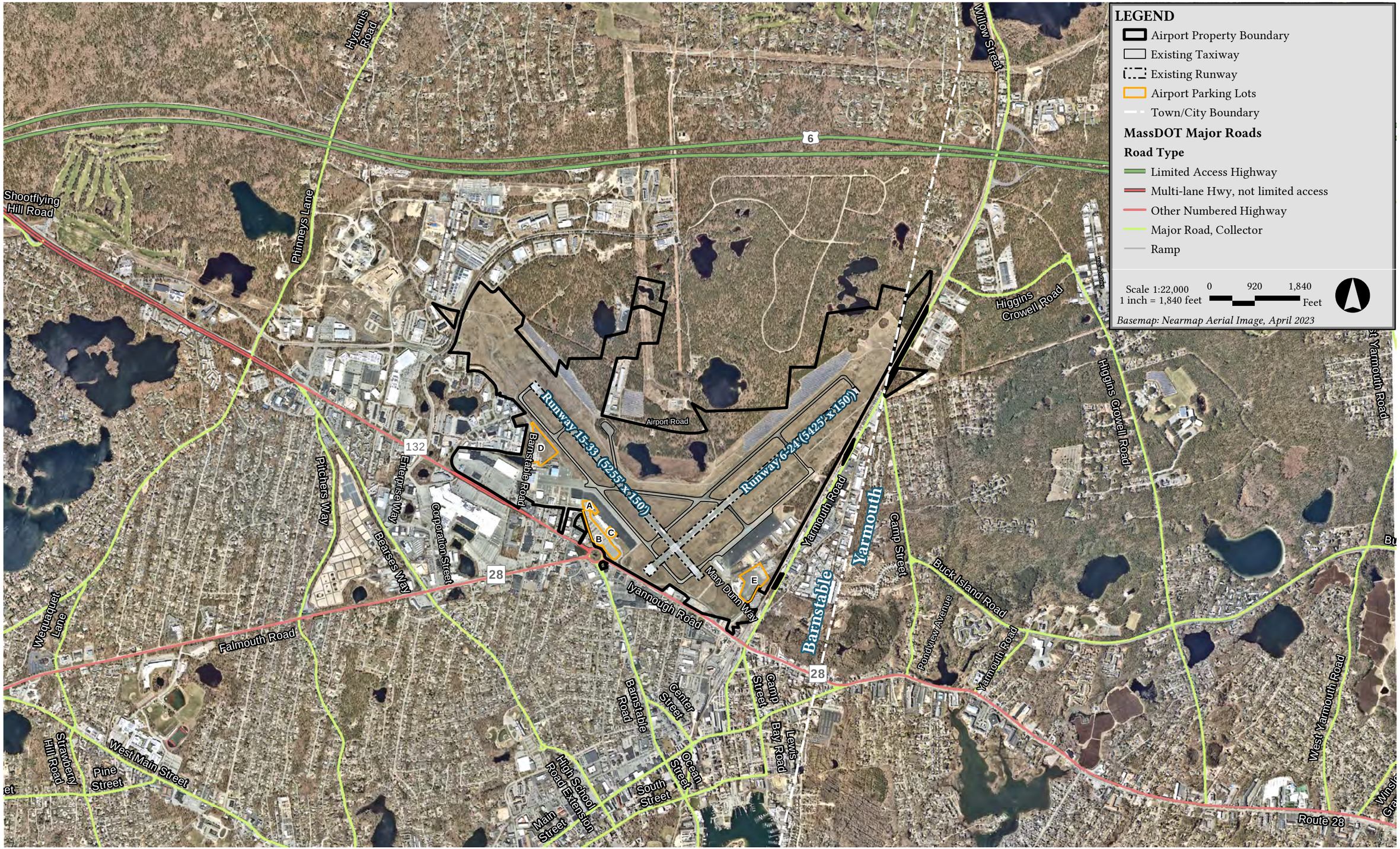
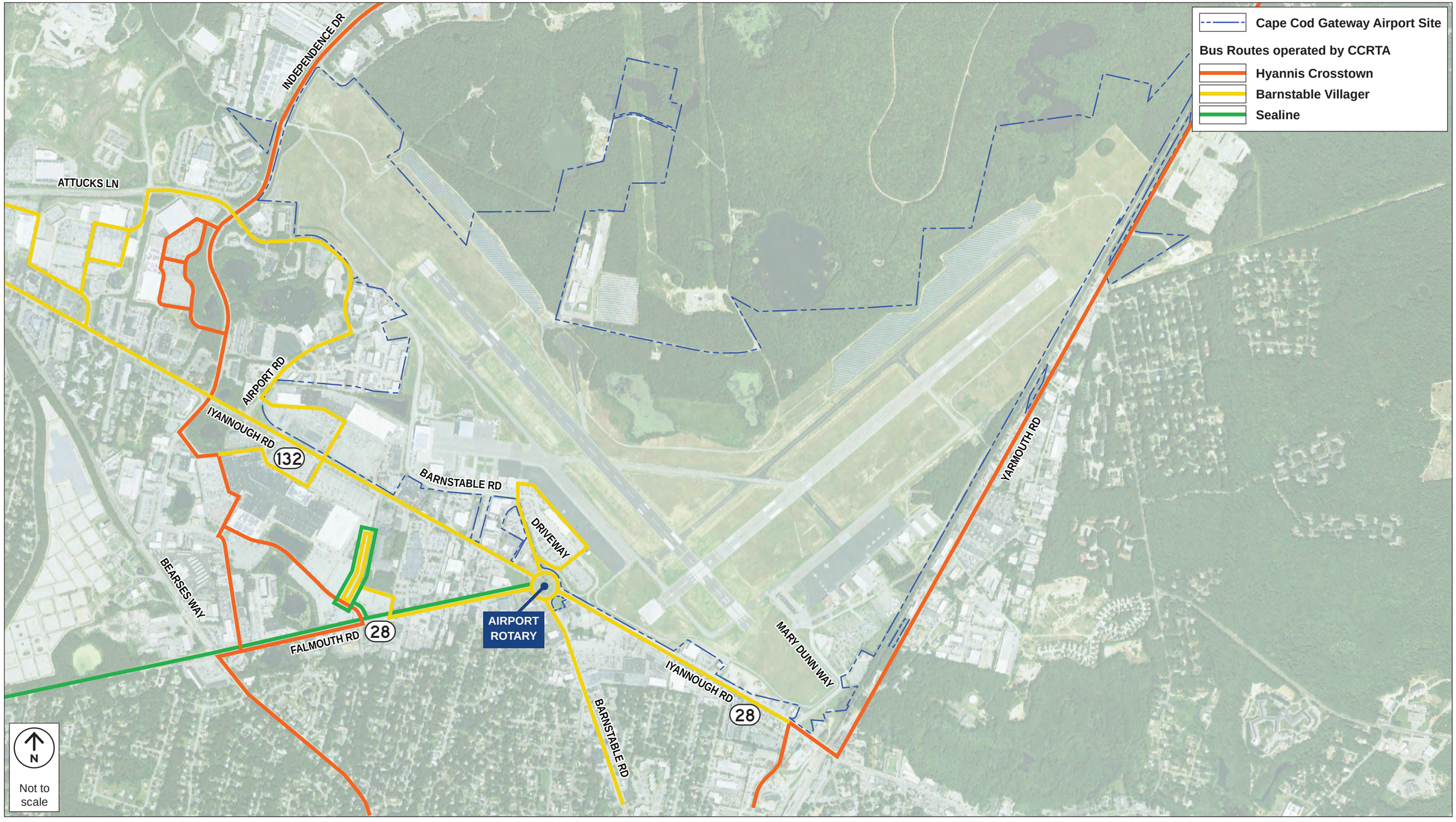
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Cape Cod Gateway Airport Barnstable, Massachusetts

Figure 5.11-1
Roadway Network



Cape Cod Gateway Airport Barnstable, Massachusetts

HOWARD STEIN HUDSON
Engineers + Planners

Figure 5.11-2
Existing Public Transportation Services

Table 5.11-3 Existing Public Transit Services (Continued)

Transit Service	Description	Peak Headway[1]
Train Service		
Bus Routes		
Bourne Run	Buzzards Bay Train Station – Mashpee Commons via Scenic Highway, County Road, Route 38A, and Route 151	60
Sandwich Line	Downtown Hyannis – Buzzards Bay Train Station	120
Provincetown Shuttle	Beach Shuttle between MacMillian Pier – North Truro	60
Hyannis Trolley	HTC – Ocean Street Docks and Waterfront attractions	45
Woosh Trolley	Falmouth – Woods Hole	60

1. Headway is the average time between trains/buses, shown in minutes. Source: Capecodrta.org and Capeflyer.com; July 2023.
2. Weekend service only. One train on Friday night at 5:42 p.m. departing South Station outbound and one train at 8:45 p.m. departing Hyannis inbound. One train on Saturday/Sunday morning at 7:45 a.m. departing South Station outbound and one train at 6:10 p.m. departing Hyannis inbound.
3. FLEX picks-up and drops-off passengers at designated stops and flexes off its route up to ¾ of a mile to serve people who have difficulty getting to a regular bus stop. For this service, reservations are required for the off route stops.

5.12 Visual Environment (Including Light Emissions) (NEPA)

The visual environment of the Airport consists of the underlying landform and the land cover (both natural and manmade development). The existing visual environment of the Airport consists of a combination of natural and manmade features. Since 1928, the Airport has been a component of the manmade visual environment of the Outer Cape. The manmade elements within the Airport include many buildings of various sizes such as the Terminal Building, air traffic control tower, hangars, maintenance equipment shared with aircraft rescue and firefighting building (ARFF), lighting vault, and various commercial buildings on land leases outside of the airfield. Additional vertical elements at the Airport include the FAA instrumentation tower and light poles. The Airport area also has flat horizontal elements including the runways, the system of taxiways, and aircraft parking areas, as well as automobile parking areas along with stormwater basins.

Light emissions at the Airport are associated with runway and taxiway edge lighting, rotating beacons, Precision Approach Path Indicators (PAPI), approach lighting systems, and other visual navigational aids that help pilots locate the Airport and execute safe landings. Additionally, apron ramp lighting, parking lot lighting, and street lighting on access roadways create light emissions from the Airport.

5.13 Historical, Architectural, Archaeological, and Cultural Resources (MEPA/NEPA)

The Proposed Action is subject to Section 106 of the National Historic Preservation Act (36 CFR 800) and Massachusetts General Laws, Chapter 9, Sections 26-27C as amended by the Acts of 1988 (950 CMR 71). Section 106 of the National Historic Preservation Act of 1966 requires Federal agencies to consider the effects of their projects on properties that are listed in, or are eligible for listing in, the National Register of Historic Places. See **Figure 5.13-1**. The lead Federal agency for a project must determine whether any property located within the project's Area of Potential Effect

(APE) is listed in, or may be eligible for listing in, the National Register. The APE for archaeological resources is defined as locations where the proposed project may alter or disturb surface and/or subsurface soils that contain, or have the potential to contain, archaeological sites. For the purposes of Section 106, FAA is the lead Federal Agency, and the process will be administered on the state level by the State Historic Preservation Officer (Massachusetts Historical Commission).

In addition to the State Historic Preservation Officer (SHPO), projects that may cause potential impacts to historic properties must consult other involved parties including local historic commissions and Native American tribes. The FAA is required to engage in government-to-government consultation consistent with FAA Order 1210.20, American Indian and Alaska Native Tribal Consultation Policy and Procedures, if an Indian Tribe is a consulting party.

MHC comments on the ENF note that the Airport contains two sites which are considered significant ancient Native American sites. No work is proposed at these archaeological site locations and as such, no impacts to these sites are anticipated. A third site, an Indian Trail, crosses north-south through the Airport property. Project sites within vicinity of this former Indian Trail have previously been disturbed during previous airfield construction activities.

5.14 Section 4(f) Resources (NEPA)

Section 4(f) of the federal Department of Transportation Act of 1966 provides that the "Secretary shall not approve any program or project which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance; or land of a historical site of national, state, or local significance as determined by the officials having jurisdiction thereof unless there is no feasible and prudent alternative to the use of such land, and such program or project includes all possible planning to minimize harm from the land use.

As described in Sections 5.4 and 5.15, the Hyannis Ponds Wildlife Management Area is located north of the Airport property, between Runways 15-33 and 6-24 and outside of the Proposed Projects limits. Further to the east of the Airport lies Yarmouth Water Supply land, part of the Zone II protection area for the Town of Yarmouth public water supply wells. Additionally, multiple golf courses are just east of this Yarmouth property. To the west of Phinneas Lane, west of the Airport, are additional Barnstable Water Supply Land parcels. See **Figure 5.12-1**, Public Owned Open Spaces. There are no known historic structures or archaeological sites within the Project areas proposed for improvements under the Preferred Alternatives.

5.15 Land Use (MEPA/NEPA)

The Airport falls under the land use designations of both the Town of Barnstable and the Town of Yarmouth. Within the Airport, land uses include tax exempt, commercial, and open land. Surrounding land uses include commercial, industrial, mixed use-other, residential multi-family, and residential single-family to the east, west, and south; agriculture, tax exempt, unknown, and water. See **Figure 5.15-1** for land uses within and surrounding the Airport.

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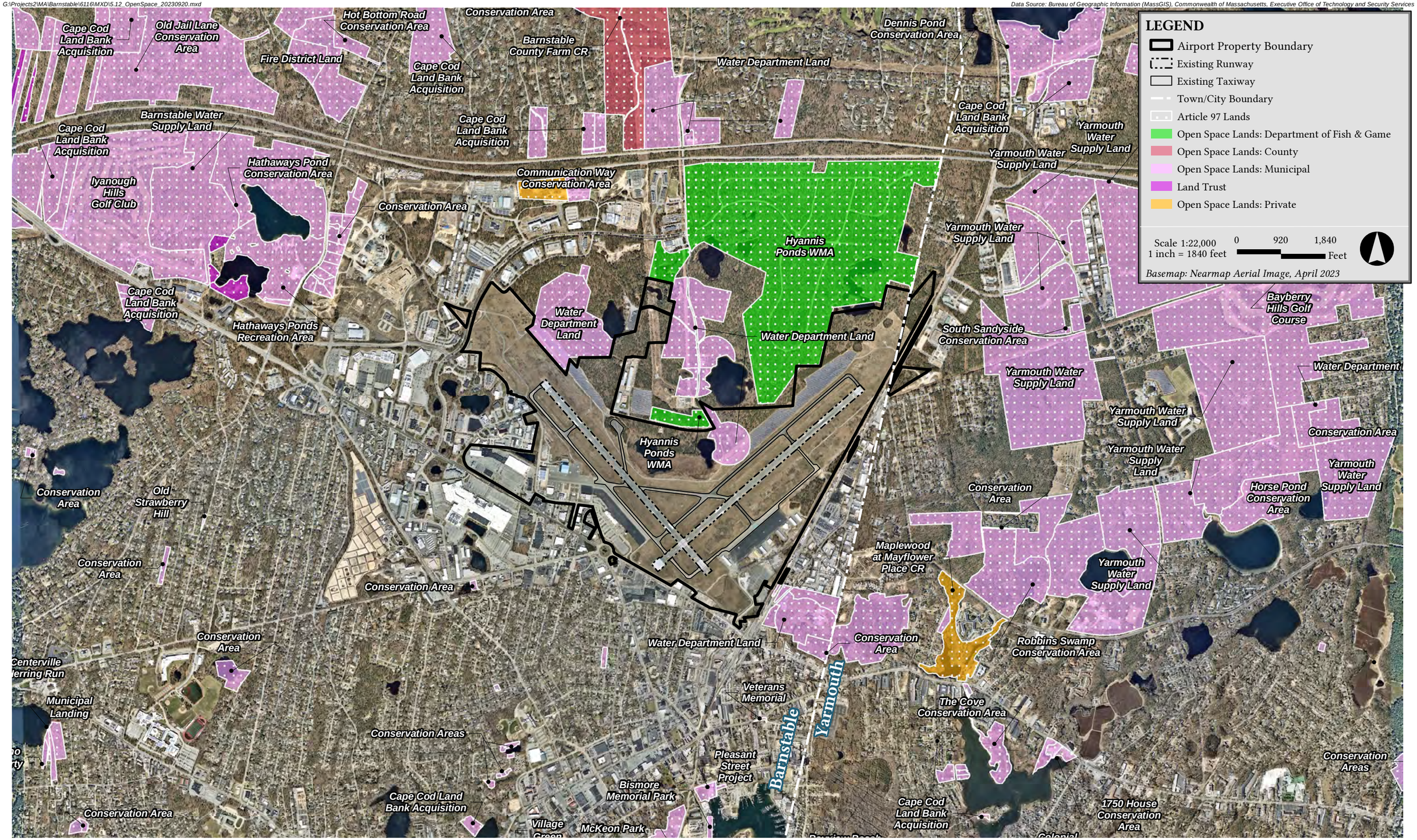
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Cape Cod Gateway Airport **Barnstable, Massachusetts**

Figure 5.12-1
Open Space

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

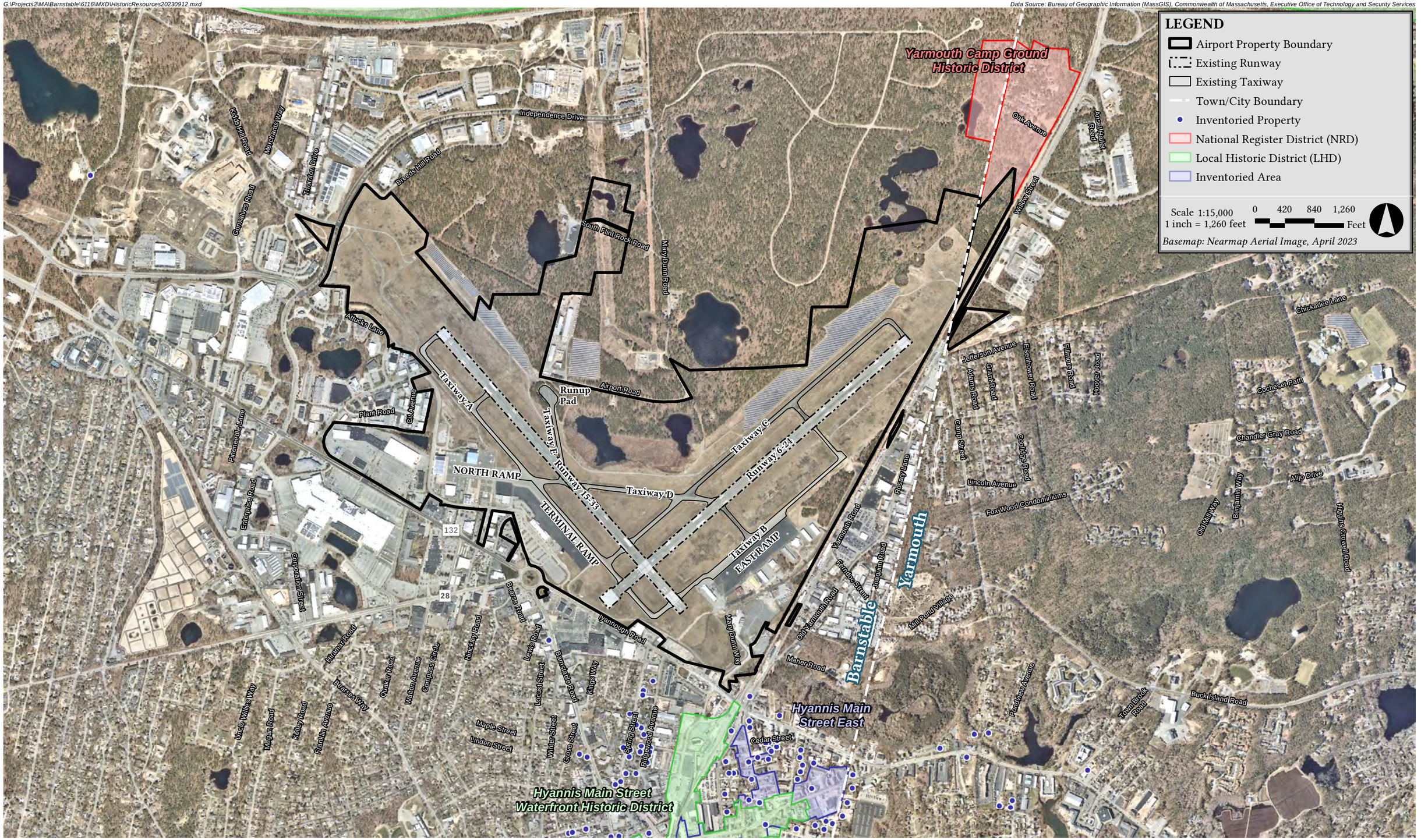

Figure 5.13-1
Historic Resources

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

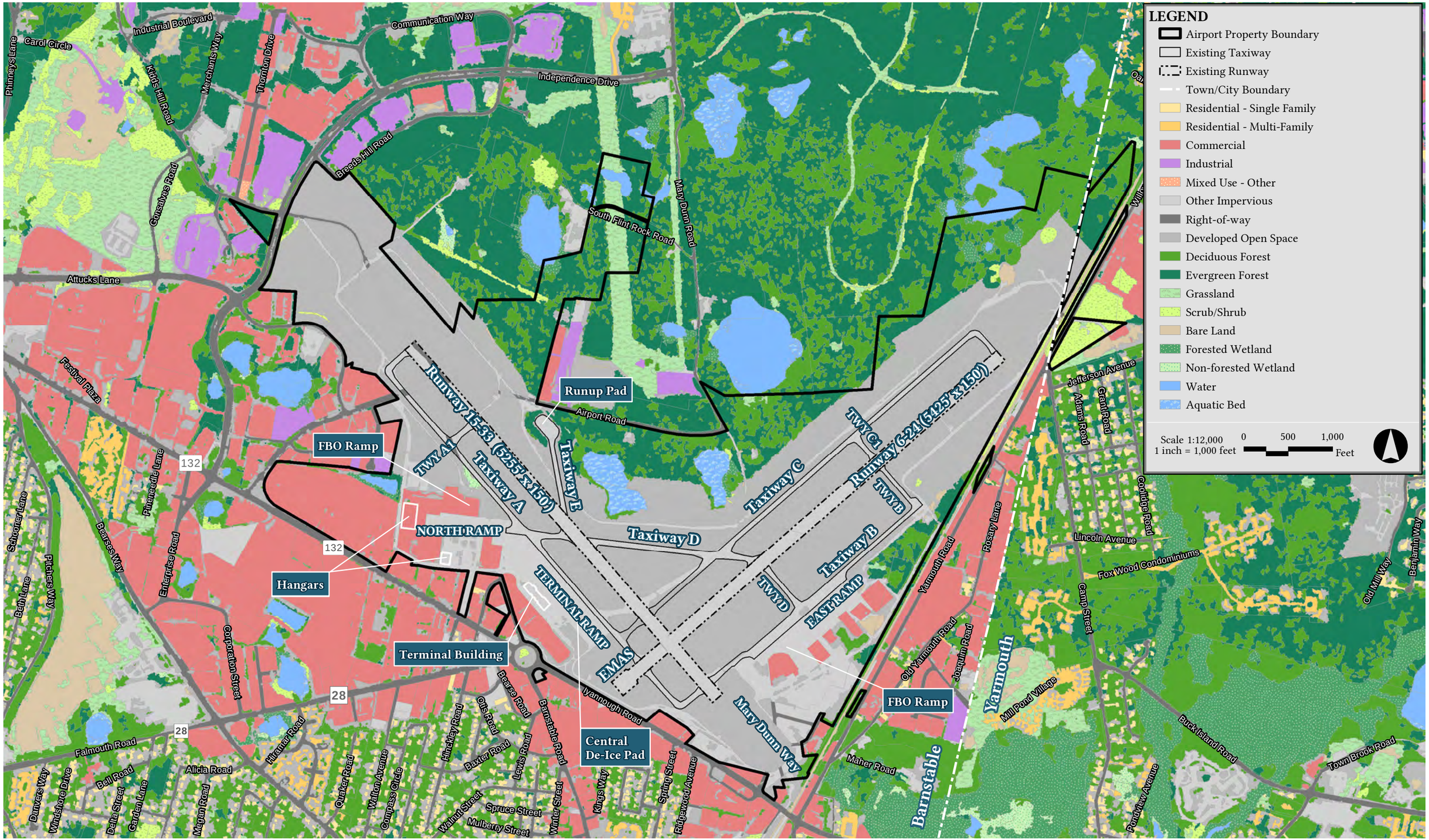

Figure 5.15-1
Land Use

The Airport is generally bordered by a Massachusetts Fish and Wildlife designated conservation area (Hyannis Ponds Wildlife Management Area), Barnstable County Training Facility, and Route 6 to the north, Barnstable Road (Route 132) to the south, Yarmouth Road to the east along with Barnstable Water Supply owned land, and an industrial park (Independence Park) to the west. Iyannough Road (State Route 132) is a

major arterial road connecting Hyannis Village Center with both the Airport and the Mid-Cape Highway (Route 6). Several planned unit commercial developments are located in the vicinity of the Airport, which house multiple tenants with large parking areas to accommodate the businesses. Abutting the east side of the Airport is Yarmouth Road, densely populated with low-density commercial and industrial uses such as automobile dealerships, metal recycling shops, marine repair shops, residential properties, and home improvement supply warehouses. Yarmouth Road also connects the Hyannis Village Center with the Mid-Cape Highway at Exit 7.

The land uses north of the Airport are generally undeveloped areas of wooded land, wetlands, and ponds. In addition to the area's environmental value, the area is deemed critical to the public health, safety, and welfare as it is designated as a Wellhead Protection District for the municipal drinking water supply. Very few land uses are present aside from municipal utility infrastructure and public infrastructure for water and power distribution.

The closest public school buildings are located greater than one-half mile from the Airport. Barnstable Community Innovation School (elementary, public) is located at 156 Bearses Way in Hyannis within the approach to Runway 24. The Academy of Early Learning (preschool, private) is located at 465 Falmouth Road in Hyannis, southwest of the Airport. Sturgis Charter Public School at 427 Main Street (high school, public) is located south of the Airport. Faith Christian Academy (elementary, private) at 270 Communication Way is directly adjacent to the Airport and in the Runway 15 approach. Trinity Christian Academy (k-12, private) is located to the north of the Airport at 979 Mary Dunn Road in Barnstable.

With a few exceptions, the Project sites are under active aviation or aviation-related use. All proposed Projects with the exception of easement acquisitions are on existing Airport property and are within Business and Industrial Zoning Districts,

5.15.1 Existing Zoning

The Airport property is currently zoned as nine different zoning codes, five in Barnstable and four in Yarmouth along with seven others in proximity to the Airport, as can be seen in **Figure 5.15-2**. The Airport property is also subject to six overlay districts in the Town of Barnstable. Zoning districts of Airport locations within Barnstable include Business District (B), Industrial (IND), Industrial Limited (IND LTD), Highway Business (HB), and Hyannis Gateway (HG). Airport zoning within Yarmouth includes the Adult Entertainment District (AED). Updated in July 2003, the Town of Barnstable implements local regulations[7] to restrict the use of land adjacent and proximate to the Airport to activities and purposes compatible with standard Airport operations.

[7] See Town of Barnstable Code Chapter 13: Airport, effective March 4, 1958.

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

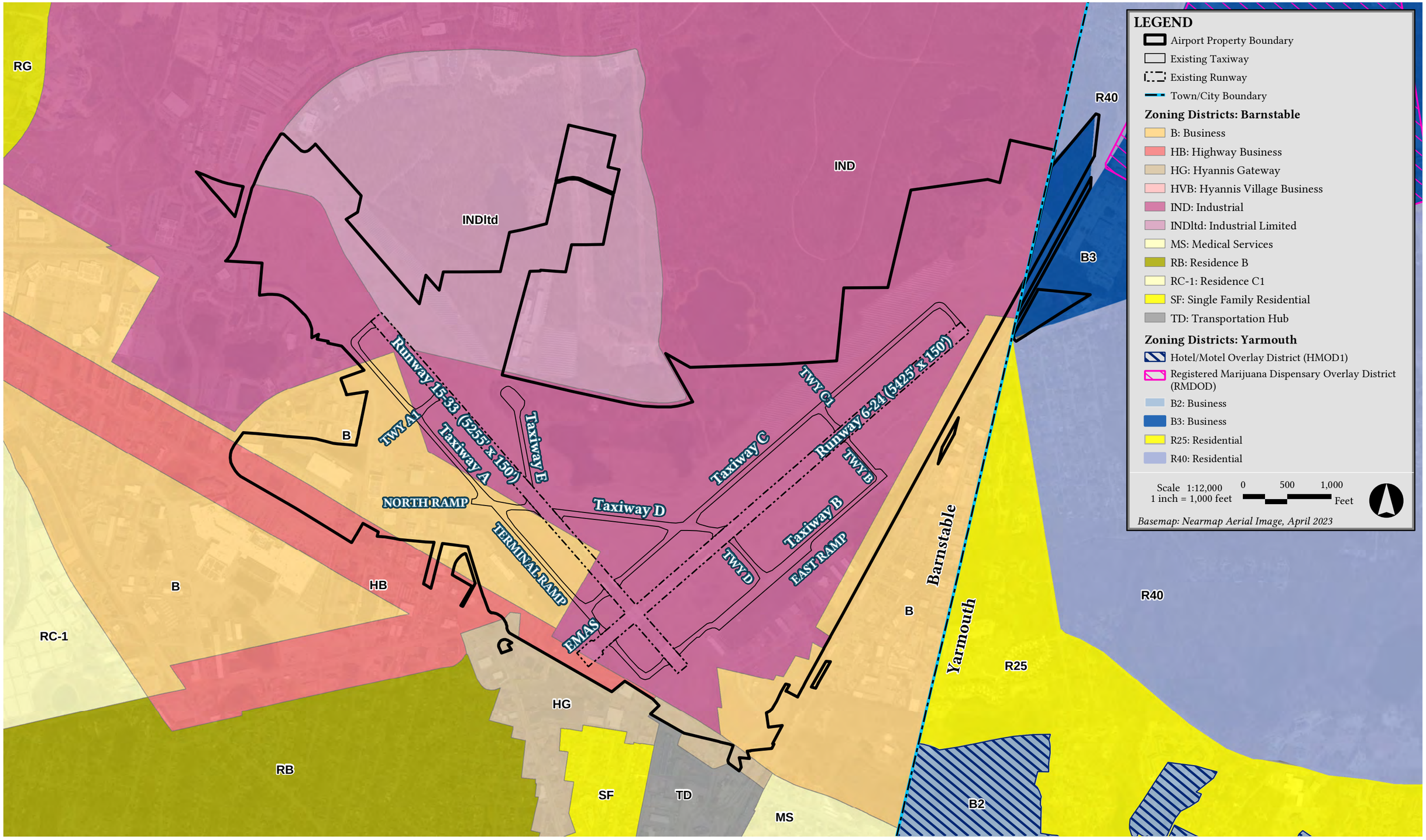

Figure 5.15-2
Zoning

5.15.2 Runway Approaches and Protection Zones

Runway Protection Zones (RPZs) are large trapezoidal areas on the ground off each runway end that are within aircraft approach and departure paths as shown in **Figures 3.3-1 and 3.3-2**. The RPZs are intended to enhance the protection of people and property on the ground. Many land uses (i.e., residential, places of public assembly, fuel storage) are prohibited by FAA standards within these areas. However, these limitations are only enforceable if the RPZ is owned or controlled by the Airport. The dimensions of the RPZ for each runway end are a function of the type of aircraft and the approach visibility minimums associated with operations on that runway. The RPZ begins 200 feet beyond the end of the area useable for takeoff and landing for all runways. The existing approach visibility minimums are shown in **Table 5.16-1**. The Airport currently owns land in fee or easement off Runway 15 and 24 ends to control portions of the Airport's RPZs as well as to prevent the construction of obstructions or to maintain vegetative heights to avoid impact to the 14 CFR Part 77 approach surfaces.

Areas within RPZs that are not currently under Airport control in avigation easement or fee simple include all portions of the Runway 6 RPZs west of Iyannough Road, the north and southwest corners of the Runway 15 RPZ, the southern corner of the Runway 24 RPZ, the eastern portion of the Runway 33 RPZ. There are several public roads, residences, commercial/industrial buildings, rail facilities, and parking lots located within the RPZs. These roads include, but are not limited to, Iyannough Road, Yarmouth Road, Mary Dunn Way, and Barnstable Road. According to recently published guidance by the FAA, public roads are not considered compatible land uses within RPZs and are not recommended. The current FAA guidance does not require relocation of existing roadways within RPZs unless one of the following triggers occurs:

- An airfield project (i.e., runway extension, runway shift);
- A change in the critical design aircraft that increases the RPZ dimensions;
- A new or revised instrument approach procedure that increases the RPZ dimensions; or
- A local development proposal in the RPZ (either new or reconfigured).

Table 5.16-1 RPZ Dimensions Per Runway End

Runway	Minimums (feet)	Length (feet)	Inner Width (feet)	Outer Width (feet)	Acreage
Runway 6	1 mile	1,700	500	1,010	29.465
Runway 24	4,000 feet	1,700	1,000	1,510	48.978
Runway 15	2,400 feet	2,500	1,000	1,750	78.914
Runway 33	1 mile	1,700	500	1,010	29.465

Sources: FAA AC 150/5300-13B; FAA HYA Terminal Procedures, effective date: March 31, 2022.

5.16 Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks (MEPA/NEPA)

MEPA regulations (301 CMR 11.00) require that a project consider the "social conditions" of its site. In addition, the Environmental Justice Policy of the Massachusetts Executive Office of Energy and Environmental Affairs directs all agencies, offices, boards, and other entities under the Executive Office of EEA to consider environmental justice in all its programs, to the extent applicable and legally allowable.

At the federal level, FAA Order 1050.1F requires the analysis of potential impacts of alternatives on "economic activity, employment, income, population, housing, public services, and social conditions." In compliance with these regulatory frameworks, the following sections characterize the existing socioeconomic, environmental justice, and children's health and safety conditions within and proximate to the improvement Projects.

5.16.1 Socioeconomics

This section provides the socioeconomic characteristics of areas surrounding the Airport. Socioeconomics is the term used to describe aspects of a project that are either social or economic in nature, or a combination of the two. This socioeconomic information identifies how factors of the human environment such as population, employment, housing, and public services might be affected by the proposed action and alternative(s).

Section 1508.14 of the Council on Environmental Quality (CEQ) Regulations states that "economic or social effects are not2 intended by themselves to require preparation of an environmental impact statement. When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment." Therefore, the requirement to prepare socioeconomic analysis in an Environmental Assessment (EA) or Environmental Impact Statement (EIS) is project specific and is dependent upon the existence of a relationship between natural or physical environmental effects and socioeconomic effects.

The study area for socioeconomic factors is generally larger than the study area for other impact categories, as a proposed action could have an effect on the social fabric of the surrounding community. Accordingly, this environmental assessment considers the impacts to the surrounding communities on the following broad indicators: economic activity, employment, income, population, housing, and services.

U.S. Census Bureau, state, and local government data is utilized in the tables below to describe baseline socioeconomic characteristics of communities surrounding the Airport. The following sections provide information to understand the demographics within the Town of Barnstable and surrounding communities, including incomes data, race, housing, and employment to provide a comparison between current conditions and projected impacts associated with the Project.

Economic Activity and Income

The Airport is a significant economic engine to the economy of the Town of Barnstable, surrounding communities, and The Cape Region. The Airport is a critical commercial transportation hub and has attracted over 40 businesses located on the Airport, with several more businesses seeking to operate from the Airport in the future**.** These businesses are important employers, and generators of economic activity, to residents of the Town of Barnstable, and surrounding Cape Cod communities.

The income of individuals, and households, within the study area communities are above the national average according to the Census Bureau QuickFacts for 2022 data. The median household income for the United States, 2017-2021 (in 2021 dollars) was $69,021 and $89,026 for the Commonwealth of Massachusetts. For Barnstable County, the median household income was $82,619, lower than the statewide median, but higher than the national median. In the Town of Barnstable, the median household income was $82,816, and within the surrounding towns of Yarmouth, Sandwich, and Mashpee, median household incomes were $72,124, $111,610, and $83,563, respectively.

Per capita income, defined as the total personal income in a geographic region divided by the total population in the region, shows similar trends to median income for the communities surrounding the Airport, with generally higher than national per capita income ($37,638) and comparable to Barnstable County's per capita income of $49,973, see **Table 5.16-2**.

Consistent with the above national household income data, poverty statistics show that Barnstable County has a lower poverty rate (8%) compared to the national (11.60%) and statewide (10.40%) rates. In the Town of Barnstable, the poverty rate is 7.90%. Surrounding towns also have below state and county poverty rates.

Table 5.16-2 Economic Activity and Income

	National	State	Barnstable County	Barnstable	Yarmouth	Sandwich	Mashpee
Median household income (in 2021 dollars), 2017-2021	$69,021	$89,026	$82,619	$82,816	$72,124	$111,610	$83,563
Per capita income in past 12 months (in 2021 dollars), 2017-2021	$37,638	$48,617	$49,973	$46,996	$45,471	$54,994	$48,569
Persons in poverty, percent	11.60%	10.40%	8.00%	7.90%	6.50%	5.20%	5.90%

Population and Housing

The overall population in Barnstable County is 232,457. In the Town of Barnstable, the population is 49,532. Communities surrounding the Airport include Yarmouth (population 25,244), Sandwich (population 20,611) and Mashpee (population 15,468). The number of residents who are age 65 and over is approximately 33% of the population in Barnstable County. Within the Town of Barnstable,

23% of the residents are 65 and in Yarmouth, Sandwich, and Mashpee 33%, 25% and 29% of the residents are 65+ respectively. These populations in the 65+ age group are above the state amount of 18% and national amount of 17%. **Table 5.16-2** provides population demographics data.

Table 5.16-3 Population Demographics for the Town of Barnstable, Town of Yarmouth, Town of Mashpee, and Sandwich

	National	State	Barnstable County	Barnstable	Yarmouth	Sandwich	Mashpee
Population	333,287,557	6,981,974	232,457	49,532	25,244	20,611	15,468
Population change (%) 2020 to 2022	0.60%	-0.70%	1.50%	1.30%	0.90%	1.70%	2.70%
Households, 2017-2021	124,010,992	2,714,448	98,163	19,748	10,704	7,918	6,603
Persons under 5 years, percent	5.60%	4.90%	3.30%	4.30%	3.90%	3.20%	4.50%
Persons under 18 years, percent	21.70%	19.20%	13.80%	17.90%	14.10%	17.30%	15.80%
Persons 65 years and over, percent	17.30%	18.10%	33.20%	23.30%	33.00%	25.40%	28.70%

Racial demographic data is provided in **Table 5.16-4**.

Table 5.16-4 Race Information

	National	State	Barnstable County	Barnstable	Yarmouth	Sandwich	Mashpee
White	75.50%	79.40%	91.80%	83.30%	85.20%	93.00%	85.30%
Black or African American	13.60%	9.50%	3.80%	5.70%	5.90%	1.50%	2.90%
American Indian and Alaska Native	1.30%	0.50%	0.70%	0.20%	0.10%	0.30%	3.70%
Asian alone	6.30%	7.70%	1.70%	0.90%	2.60%	2.60%	2.50%
Native Hawaiian and Other Pacific Islander	0.30%	0.10%	0.10%	0.00%	0.00%	0.00%	0.00%
Two or More Races	3.00%	2.70%	1.90%	6.60%	2.80%	1.90%	4.50%
Hispanic or Latino	19.10%	13.10%	3.70%	6.80%	2.90%	2.30%	1.30%
White alone, not Hispanic or Latino	58.90%	69.60%	88.90%	79.10%	84.50%	91.00%	84.60%

Table 5.16-5 provides information on the labor force and various labor force characteristics including the current number of employed and unemployed persons within an area, consumer price indexes, productivity, and demographic characteristics of the labor force.

Table 5.16-5 Employment and Home Ownership Statistics

	National	State	Barnstable County	Barnstable	Yarmouth	Sandwich	Mashpee
In civilian labor force, total, percent of population age 16 years+, 2017-2021	63.10%	67.10%	59.50%	67.00%	57.60%	64.90%	60.10%
Owner-occupied housing unit rate, 2017-2021	64.60%	62.40%	80.80%	75.60%	80.70%	89.60%	83.70%
Median value of owner-occupied housing units, 2017-2021	$244,900	$424,700	$445,500	$430,100	$382,700	$422,300	$389,400

Positive Economic Impacts

In the Town of Barnstable, and surrounding communities, many socioeconomic statistics are above statewide and national amounts. Additionally, the Airport provides significant positive economic impacts to the area.

The MassDOT Aeronautics Division conducts period studies to quantify the contributions of the state's airport to local and regional economies. In a 2019 study [8], MassDOT Aeronautics estimated that Cape Cod Gateway Airport contributed to total employment of 1,724 workers with a total payroll of $73,761,000 and a total economic contribution to the region of $157,240,000. This economic contribution includes "all on-airport business and government agency, capital improvement project, visitor, and multiplier impacts."

The report notes "Over the last 10 years, the FAA, MassDOT, and Barnstable Municipal Airport (HYA) have made significant strategic investments into airport infrastructure, which has helped to position the airport for future economic growth while enhancing airfield safety. With its new airport terminal building, HYA has been able to attract JetBlue to provide seasonal service from New York to Cape Cod."

The benefits of an airport go beyond what can be captured by statistics. There is a great deal of economic activity that takes place beyond the airport including expenditures by the airport and businesses on the airport that flow through the local and regional economy. Other economic benefits include employees working on the airport, purchasing local goods and services, such as gas or groceries, which in turn circulates through the local economy by supporting the jobs and payroll of other businesses and thereby generates additional economic activity. This effect is referred to as a "multiplier impact." Furthermore, visitors flying into airports typically spend money in the local community. These total impacts reflect the economic activity of an airport, and the benefits that extend beyond the Airport to the wider community.

[8] Massachusetts Department of Transportation Aeronautics Division (2019). *Massachusetts Statewide Airport Economic Impact Study Update, Executive Summary.*

Construction Related Positive Socioeconomic Impacts

Project benefits include the estimated $100+ million in construction spending to the region along with the creation of construction related jobs and spending benefits to local communities. Research indicates that higher incomes and health outcomes are positively related. A 2011 report from the National Center for Health Statistics notes that the "association between [socioeconomic] measures, such as education and income, and health is well established.[9]"

As noted above, the Project will provide economic benefits due to the anticipated positive impact of construction spending and employment. The Project will provide an estimated $74 million of infrastructure construction in Phase I and $24 million[10] in construction related spending in Phase II, providing spending in the region, along with multiplier effects of this spending throughout the surrounding communities.

The Project related construction spending supports local jobs in the construction and materials industries, energized local economies, and supports the positive trends noted above in socioeconomic factors of the Town of Barnstable and surrounding Airport communities – including higher than national and state measures of income, high labor force participation, and favorable economic measures supporting stability in the community – such as high levels of homeownership.

5.16.2 Environmental Justice

In accordance with the MEPA Public Involvement Protocol for Environmental Justice Populations (the "EJ Involvement Protocol") and the MEPA Interim Protocol for Analysis of Project Impacts on Environmental Justice Populations (the "EJ Analysis Protocol"), this section describes the efforts made and planned to engage potentially affected Environmental Justice (EJ) communities.

This section also evaluates existing health and environmental burdens including health vulnerabilities, historical or existing sources of environmental pollution, and climate risks. A summary of the Project's potential impacts is presented in Section 6.12.

5.16.2.1 Existing EJ Population

Per the Massachusetts Executive Office of EEA, EJ is based on the principle that all people have a right to be protected from environmental pollution, and to live in and enjoy a clean and healthy environment. The EEA has established an EJ Policy (updated June 2021) to "help address the

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9 National Center for Health Statistics. 2012. Health, United States, 2011: With Special Feature on Socioeconomic Status and Health. Hyattsville, MD: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics. http://www.cdc.gov/nchs/data/hus/hus11.pdf

https://www.urban.org/sites/default/files/publication/49116/2000178-How-are-Income-and-Wealth-Linked-to-Health-and- Longevity.pdf

10 Airport Master Plan Update (2022). Implementation Plans and Financials, pages 7-8 and 7-9.

disproportionate share of environmental burdens experienced by lower-income people and communities of color" and "ensure their protection from environmental pollution as well as promote community involvement in planning and environmental decision-making."

MEPA has classified areas of Massachusetts as to whether they meet the criteria of an EJ Population by using the United States Census data to determine whether a block group meets one or more of the following criteria:

- The annual median household income is not more than 65% of the statewide annual median household income;
- Minority groups comprise 40% or more of the population;
- 25% or more of households lack English language proficiency;
- Minority groups comprise 25% or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150% of the statewide annual median household income; or
- The Secretary has determined that a particular neighborhood should be designated as an EJ population.

Based on the updated EJ Viewer maps, the Project is located in and within one mile of communities that meet the criteria for EJ populations including minority, minority and income, and minority, income and English isolation. **Figure 5.16-1** shows the EJ populations within a one-mile radius (denoted by a dashed yellow circle) around the Project site and establishes the Designated Geographic Area (DGA) used as the basis for analyzing potential Project impacts and for public outreach purposes.

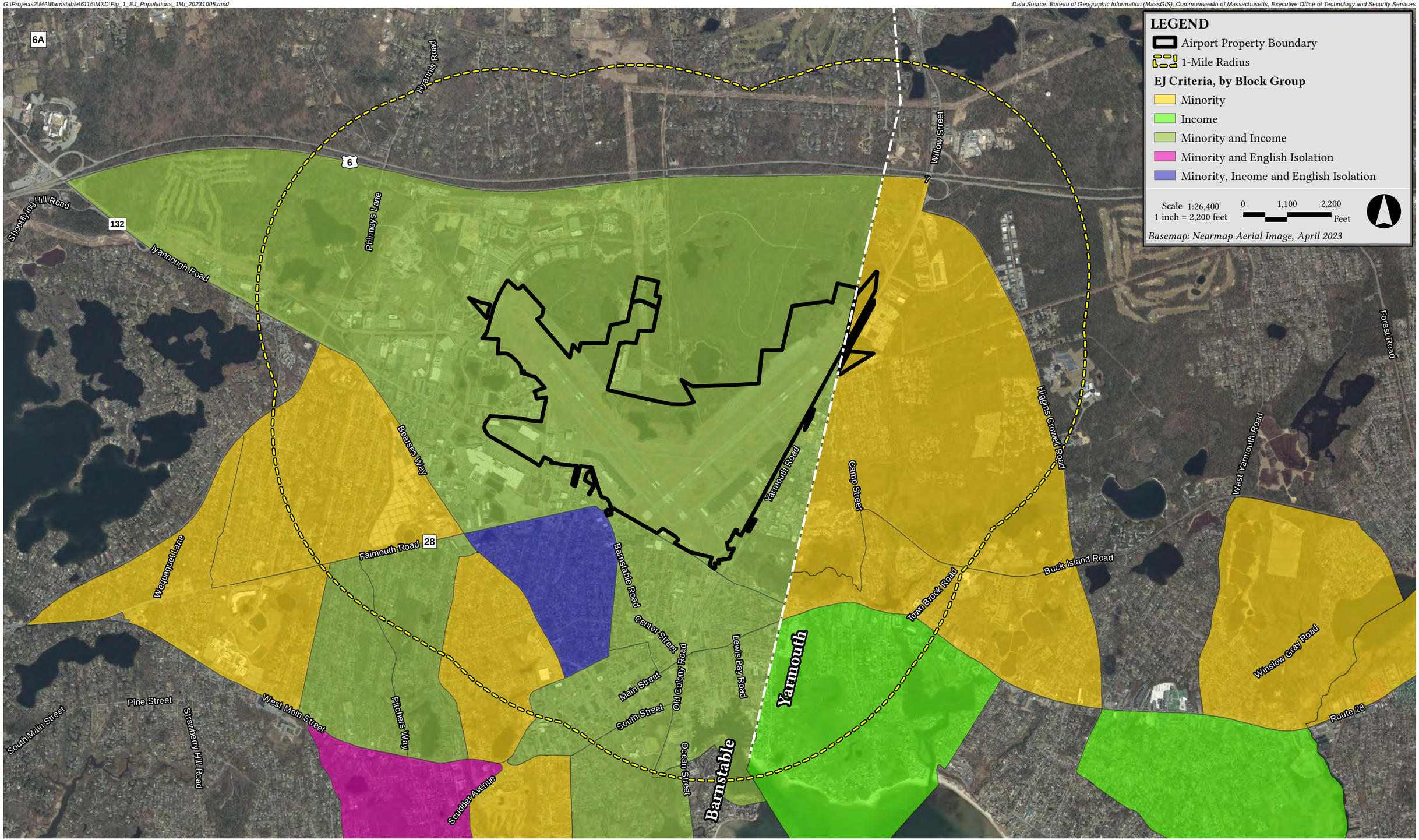
All EJ populations within the DGA are located in Barnstable and Yarmouth. The Proponent identified three EJ block groups that intersect the DGA, summarized in **Table 5.16-6**.

Table 5.16-6 Updated 2020 EJ Block Groups within the DGA

Census Tract	Block Group	EJ Designation	Municipality
1	153	Minority and income	Barnstable
1	126.01	Minority	Barnstable
2	126.01	Minority	Barnstable
1	126.02	Minority and income	Barnstable
4	126.02	Minority and income	Barnstable
3	126.02	Minority	Barnstable
2	126.02	Minority, income, and English isolation	Barnstable
2	125.02	Minority and income	Barnstable
2	153	Minority and income	Barnstable
3	153	Minority and income	Barnstable
4	121.02	Minority	Yarmouth
2	121.02	Minority	Yarmouth
3	121.02	Income	Yarmouth

G:\Projects2\MA\Barnstable\6116\MXD\Fig_1_EJ_Populations_1Mi_20231005.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Cape Cod Gateway Airport **Barnstable, Massachusetts**

Figure 5.16-1
Environmental Justice Block Groups, 1-Mile Radius

Outreach Performed To-Date

The Proponent has been dedicated to conducting public informational meetings relative to the environmental review process for the Master Plan Projects discussed in this document. Three public meetings have been held, two of which were held both in person and virtually to maximize the opportunity for participation. Translation services in Spanish and Portuguese were offered at all meetings held so far. In addition to the public meetings, the Proponent maintains a website where all public notices, documents, and meeting information and meeting materials are posted (see www.flyhya.com/environmentalassessment) as well as a dedicated email address for requests for information (enviroHYA@epsilonassociates.com).

Public Meetings

The Proponent held the first public outreach meeting in-person public meeting at the Airport on Thursday, October 27, 2022, at 6:00 PM to notify the public of the proposed improvements at the Airport. A weekday was selected to avoid interfering with personal schedules. The date was chosen to be ahead of the ENF submission to allow for the incorporation of community input into the filing. Evening (6:00 to 8:30 PM) was selected as a meeting time to allow people to come after work. Translation services in Spanish and Portuguese were offered as well.

Prior to the ENF filing, additional efforts were made including:

- An updated EJ Reference List was obtained from the MEPA office (received from MEPA on September 26, 2023). See **Appendix J**.
- Newspaper ads, postcards, and press releases sharing a brief description of the Project as well as notifying the public of the October 27, 2022 public meeting were shared far and wide.
- The EJ Screening Form (translated to Portuguese and Spanish) was distributed on October 12, 2022. See **Appendix J**.
- A website was created to provide Project information, updates, meeting notices, and presentation materials.
- A Project email was made available to allow the public to contact the Project team with any questions or comments.
- A pamphlet with brief Project information and environmental timeline review was distributed during the October 27, 2022 public meeting.

The second public meeting was the ENF Scoping Meeting held on January 5, 2023, both virtually and in person at the Airport. This meeting was focused on the MEPA review process, a summary of the master plan projects and proposed impacts, and for those that attended in person, a site tour of the Airport was held, visiting each project area. Outreach efforts for this meeting included the following:

Newspaper ads, emails to stakeholders, and press releases sharing a brief description of the Project as well as notifying the public of the January 5, 2023 public meeting were shared far and wide.

The Airport's website was updated to include a downloadable version of all meeting notices, and translations of said notices.

After the meeting, the presentation was published on the Airport's website.

A third public outreach meeting was held virtually at 2:00 PM and in-person at the Barnstable Town Hall on Thursday, June 21, 2023, at 6:00 PM to update the public on revisions made to proposed improvements at the Cape Cod Gateway Airport. The meeting also provided an opportunity to share information on additional impact analyses conducted since the filing of the ENF. Similar to past meetings, a weekday was selected to avoid interfering with personal schedules and evening hours (6:00 to 8:30 PM) selected to allow people to come after work. Translation services were also offered in Spanish and Portuguese.

Efforts made to promote the meeting included:

- Newspaper ads on Barnstable Patriot and the Cape Cod Times and emails to stakeholders.
- The Airport's website was updated to include a downloadable version of the all meeting notices, and translations of said notices.
    - After the meeting, the presentation was published on the Airport's website.

On September 6, 2023, a FAA Noise Policy Letter was distributed to stakeholders notifying them of the opportunity to comment on FAA's Noise Policy Review Process, including evaluating use of Day-Night Average Sound Level (DNL) as the primary noise metric. The letter noted that the comment period opened on May 1, 2023, and ended on September 29, 2023.

A fourth meeting Is planned for December 12, 2023. The meeting will virtually at 2:00 PM and an in-person meeting, presenting the same information, will be held at 6 PM at Barnstable Town Hall. This meeting will be a chance to inform the public of studies conducted since the third public meeting. More details regarding this meeting will be communicated to the public.

5.16.2.2 Enhanced Environmental Justice Analysis

The EJ Analysis Protocol applies to "any project that is likely to cause damage to the environment and is located within a distance of one mile of an Environmental Justice (EJ) population." The Proposed Action does not meet or exceed MEPA review thresholds under 301 CMR 11.03(8)(a)-(b) and will not add 150 or more new adt of diesel vehicle traffic over a duration of one year or more; therefore, the Project is not subject to a 5-mile radius.

Under the EJ Analysis Protocol, the analysis must include:

- An assessment of existing unfair or inequitable environmental burdens on the EJ population;
- An assessment of the Project's impacts to determine disproportionate adverse effect (if existing unfair or inequitable environmental burdens exist) on the EJ population;
- An analysis of the Project to determine Climate Change Effects (if existing unfair or inequitable environmental burdens exist); and

- Mitigation and Section 61 Findings (if the Project impacts causes a disproportionate adverse effect or Climate Change Effects on the EJ population).

5.16.2.2.1 Assessment of Existing Environmental Burden

Under the EJ Analysis Protocol, a 4-step process has been developed for assessing whether EJ populations have experienced existing unfair or inequitable environmental burdens within the DGA. As part of this approach, a series of mapping tools have been developed that focus on, (1) the rates of four vulnerable health criteria as it relates to statewide averages, (2) existing, past, and current potential sources of pollution, (3) an analysis using the RMAT Climate Resilience Output Tool, and (4) the optional analysis using the United States Environmental Protection Agency's (EPA) Environmental Justice Screening Tool (EJSCREEN). Each of these steps are described in detail below along with an evaluation based on the results for the EJ populations within the DGA.

5.16.2.2.1.1 Vulnerable Health Criteria

The vulnerable health EJ criteria are four environmentally related health indicators used to identify populations with evidence of higher-than-average rates of environmentally related health outcomes.[11] Any EJ population that exhibits "vulnerable health EJ criteria" could potentially bear an "unfair or inequitable" environmental burden and related public health consequences. Multiple terms are used to describe the vulnerable health EJ criteria as it relates to the EJ populations. These terms are defined and described below.

The vulnerable health EJ criteria are reported for a population in a specific area. The area can be a state, town, or census tract. Census tracts are small, relatively permanent statistical subdivisions of a county with a population typically between 1,200 and 8,000 people.

Health criteria are reported as rates, or the number of people with the identified condition divided by the population in consideration. The DPH EJ tool compares the community rate, the rate of the town or census tract of interest, to the statewide rate, the rate for the population of Massachusetts.

The first step is to determine whether EJ populations within the DGA have experienced higher rates of vulnerable health criteria when compared to the statewide rate. The MA DPH EJ tool provides information on these four different indicators: heart attack hospitalizations, childhood blood lead exposure, low birth weight, and childhood asthma for the most recent five-year period of available data. It should be noted that each of these datasets are available at different geographies: heart attack hospitalizations and childhood asthma are available at the community level, while low birth weight and childhood blood lead exposure are available at the census tract level. Each of these specific criteria are described below along with the results of the analysis for the municipalities within the DGA: Barnstable and Yarmouth.

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[11] EJSCREEN Technical Documentation 2014 - environmental justice screening and mapping tool (epa.gov)

[11] EJSCREEN Technical Documentation 2014 - environmental justice screening and mapping tool (epa.gov)[12] Although low birth rate is listed as exceeding the vulnerable health criteria, the rate is suppressed due to small numbers.

Heart Attack Hospitalizations

As described on the MA DPH website, heart attack hospitalization is a criterion used to identify vulnerable health EJ populations. Exposure to air pollution can increase the risk for heart attack and other forms of heart disease, and it is indicative of a serious chronic illness that can lead to disability, decreased quality of life, and premature death. EJ populations have higher than average heart attack hospitalization rates when compared to other communities.

Heart attack hospitalization data is based on data collected from all hospitals in Massachusetts of individuals older than 35 years of age, who have been admitted to the hospital for a heart attack. The vulnerable health criterion for Heart Attack Hospitalizations is the most recent five-year average age-adjusted rate of hospitalization for myocardial infarction that is equal to or greater than 100% of the state rate. This indicator is available on a community basis.

Heart Attack Vulnerable Health Criteria for the Project

EJ populations within the DGA do not meet this criterion.

Childhood Blood Lead Levels

As described on the MA DPH website, childhood lead exposure is a criterion used to identify vulnerable health EJ populations because lead exposure disproportionately impacts lower income communities and communities of color. Childhood exposure to relatively low levels of lead can cause severe and irreversible health effects, including damage to a child's mental and physical development.

Childhood Blood lead level data is based on data collected as part of the Massachusetts Lead Poisoning Prevention and Control Act, a state law that requires all children to be screened each year for lead poisoning through age three and children in high-risk communities must be screened through age four. DPH reports the five-year average prevalence of elevated (≥5 ug/dL estimated confirmed) childhood blood lead levels (ages 9 to 47 months) that are equal to or greater than 110 percent of the state prevalence. This indicator is available at the community and census tract level.

Childhood Blood Lead Levels Vulnerable Health Criteria for the Project

EJ populations within the DGA do not meet this criterion.

Low Birth Weight

Low birth weight (LBW) is a criterion used to identify vulnerable EJ populations because exposure to environmental contaminants can increase the risk of delivering a LBW baby and LBW is a significant predictor of maternal and infant health. Women of color and women of low income have a higher risk of delivering a LBW baby. LBW can increase the risk of infant mortality and morbidity, health problems throughout childhood, developing cognitive disorders, developmental delay and chronic diseases as an adult such as cardiovascular diseases and type 2 diabetes.

LBW data is collected by the Registry of Vital Records and Statistics. Medical data, such as birth weight and gestational age, are based on information supplied by hospitals and birthing facilities. DPH reports the five-year average low birth weight rate among full-term births that is equal to or greater than 110% of the statewide rate. This indicator is available at both the community and census tract level.

Low Birth Weight Vulnerable Health Criteria for the Project

EJ populations within the DGA, specifically census tracts 25001012102 and 25001015300 in the Towns of Barnstable and Yarmouth respectively meet this criterion.

Childhood Asthma

As described on the MA DPH website, childhood asthma is a criterion used to identify vulnerable EJ populations because people of color and low-income individuals are at greater risk for asthma exacerbations due to increased exposure to asthma triggers. Uncontrolled asthma can impact an individual's overall health and wellbeing. For example, uncontrolled asthma can reduce activity levels, negatively impact cardiovascular fitness, and increase school absenteeism.

Childhood asthma data are based on data collected from all hospitals in Massachusetts for children between the ages of 5 and 14 years that have visited an emergency room for the treatment for asthma. DPH reports the five-year average rate of emergency department visits for childhood (5 to 14 years) asthma that is equal to or greater than 110% of the state rate. This indicator is available at the community and town levels.

Childhood Asthma Vulnerable Health Criteria for the Project

EJ populations within the DGA, in the Town of Barnstable, meet the childhood asthma criterion.

Vulnerable Health Criteria Summary

Based on the information described above, the Towns of Barnstable and Yarmouth meet childhood asthma and low birth weight vulnerable health criteria.[12] The data are presented in **Table 5.16-7**. Based on the results, some of the EJ communities in the DGA are considered vulnerable or subject to at least some level of existing environmental burdens.

5.16.2.*2.1.2* Potential Sources of Pollution

As described in the MEPA Interim Protocol for Analysis of Projects Impacts on Environmental Justice Populations, the next step of the existing environmental burden analysis focuses on other potential sources of pollution within the boundaries of the EJ communities. Specifically, the MEPA Protocol specifies consultation of the data layers in the MA DPH EJ tool to review other potential sources of pollution near the EJ communities (see **Figure 5.16-2**).

[12] Although low birth rate is listed as exceeding the vulnerable health criteria, the rate is suppressed due to small numbers.

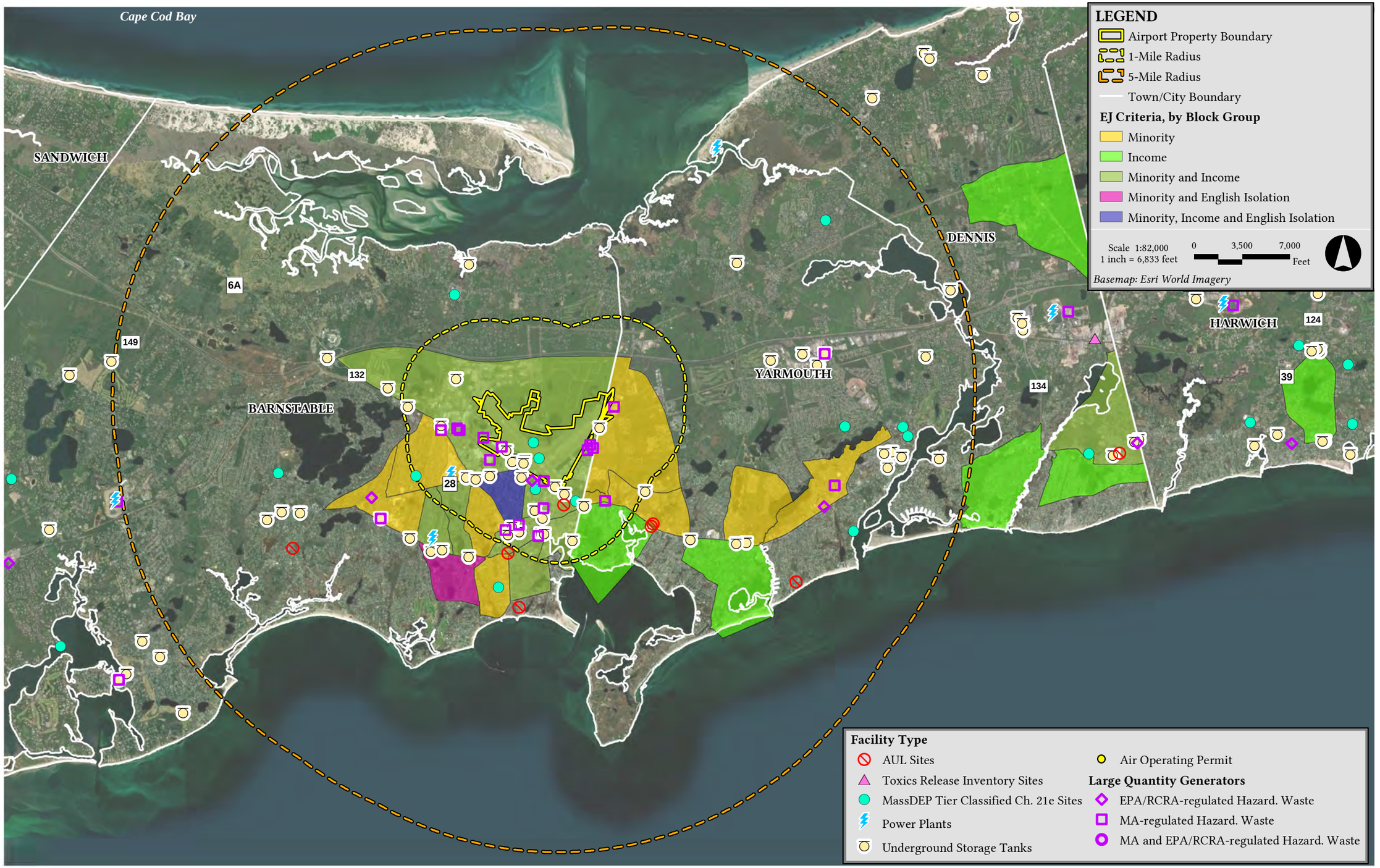


Figure 5.16-2
Environmental Justice Communities - Potential Sources of Pollution

Table 5.16-7 Vulnerable Health Criteria

Vulnerable Health Criteria	Geography Type	Community Rate	Community Rate Confidence Interval	Statistical Significance	Stability	Statewide Rate	Statewide Rate Confidence Interval	110% Statewide Rate	>110% of Statewide Rate?
Heart Attack	Barnstable	28.5	26.1, 30.9	Not statistically significantly different	Stable	26.42	26.20, 26.64	29.07	No
Heart Attack	Yarmouth	28.4	25.5, 31.4	Not statistically significantly different	Stable	26.42	26.20, 26.64	29.07	No
Childhood Asthma	**Barnstable**	**93.7**	**80.6, 106.8**	**Not statistically significantly different**	**Stable**	**83.1**	**82.19, 84.00**	**91.4**	**Yes**
Childhood Asthma	Yarmouth	78.9	61.3, 96.5	Not statistically significantly different	Stable	83.1	82.19, 84.00	91.4	No
Low Birth Weight	Barnstable	205.7	138.5, 272.9	Not statistically significantly different	Unstable	216.8	211.7, 221.9	238.5	No
Low Birth Weight	Yarmouth	230.1	129.3, 331	Not statistically significantly different	Unstable	216.8	211.7, 221.9	238.5	No
Lead Poisoning	Barnstable	6.1	3.9, 8.3	Statistically significantly lower	Stable	14.99	14.72, 15.25	16.483581	No
Lead Poisoning	Yarmouth	6.9	3.3, 10.6	Statistically significantly lower	Stable	14.99	14.72, 15.25	16.483581	No
Low Birth Weight	**25001012102**	**359.7**	**44.4-675**	**Not statistically significantly different**	**Unstable**	**216.8**	**211.71, 221.93**	**238.5**	**Yes**
Low Birth Weight	**25001015300**	**411**	**142.5-679.5**	**Not statistically significantly different**	**Unstable**	**216.8**	**211.71, 221.93**	**238.5**	**Yes**

Layers from the DPH EJ Tool were downloaded into ArcGIS and a 1-mile buffer drawn around the Project site boundary. Each of the resulting layers were used to determine the number and the types of facilities and infrastructure within the EJ communities in the DGA and the enforcement history. Where available, enforcement histories and facility history were searched in the Energy & Environmental Affairs Data Portal (EEA portal).

MassDEP major air and waste facilities

MassDEP major air and waste facilities are facilities that have air operating permits, treat, store, generate or recycle large quantities of hazardous waste, or utilize large quantities of toxics. These facilities are further specified in the following sections and include airports, facilities with air permits, draft NPDES permits, hazardous waste, treatment, storage, recycling, or disposal facilities, large quantity generators, large quantity toxic users, land disposal of solid waste, and toxics release inventory sites[13].

Two large quantity toxic users are located within the DGA: Cape Cod Chips at 100 Breeds Hill Rd., approximately 0.04 miles from the Project site and ACME Laundry co inc. at 124 Ridgewood Ave, approximately 0.15 miles from the Project site. Seventeen large quantity generators are located within the DGA.

M.G.L. c. 21E sites

21E sites are sites that have experienced a release of a hazardous material above a certain threshold. Once a release is reported to MassDEP it must be cleaned up within a year or it is classified as Tier I, Tier ID, or Tier II. A Tier I site poses an immediate hazard, a Tier 1D site has not posed a permanent solution or final classification of the site while a Tier II site does not meet the criteria for an immediate hazard.

Two Tier I sites (RTN 4-0015670 and RTN 4-0026347), two Tier ID (RTN 4-0020107 and RTN 4-0000279), and 50 Tier II sites are located within the DGA.

MassDEP sites with AULs

An Activity Use Limitation (AUL) provides notice of the presence of oil and/or hazardous material contamination remaining at the location after a cleanup has been conducted pursuant to Chapter 21E and the MCP. The AUL is a legal document that identifies activities and uses of the property that may and may not occur, as well as the property owner's obligation and maintenance conditions that must be followed to ensure the safe use of the property.

[13] https://www.mass.gov/info-details/massgis-data-massdep-major-facilities

There is one AUL site (RTN 4-0010287) within the DGA. The site is located at 74 Camp St., Barnstable, MA, approximately 0.2 miles from the Project site.

Underground Storage Tanks

MassDEP regulates the registration, installation, operation, maintenance, inspection, and closure of petroleum fuel and hazardous substances of underground storage tank (UST) systems.

There are 22 UST systems within the DGA.

EPA Facilities

EPA facilities are defined as Toxic Release Inventory (TRI) facilities. TRI facilities use and/or release over a certain threshold of toxic chemicals to the environment. There are 777 individual chemicals and 33 chemical categories covered by the TRI program.

There are 19 EPA facilities within the DGA.

Road Infrastructure

Road infrastructure includes Massachusetts Department of Transportation (MassDOT) roads, and bike lanes or shared use pathways. Route 6 and Routes 28 and 132 abut the Airport to the north and south respectively. The Claire Saltonstall Bikeway, also known as the Boston to Cape Cod Bikeway, is a 135-mile bikeway marked as Bike Route 1 that runs from Boston to Provincetown.

MBTA Bus and Rapid Transit

The Massachusetts Bay Transit Authority data includes all MBTA bus routes, stops, commuter rails, commuter rail stations, parking lots, and rapid transit stops. There is an MBTA commuter rail station, the Hyannis Transportation Center, within the DGA, approximately 0.41 miles from the Project site. The station is served by the Cape Cod Main Line Hyannis branch commuter rail line. Several parking lots including the Hy-Line Parking and Steamship Authority Parking Yarmouth Road are located within the DGA, some served by shuttles running to the ferry dock.

Other Transportation Infrastructure

Other transportation infrastructure includes airports, freight yards, water taxis, railroad tracks, and ferry routes. Cape Cod Gateway Airport (the Project site) is located within the DGA.

The Hyannis-Nantucket ferry docks at Hyannis Terminal, located approximately a mile from the DGA.

Regional Transit Agencies

Regional Transit Agency layers include the 15 bus routes for the Regional Transit Authorities of Massachusetts and their associated bus stops.

The DGA is located within the Cape Cod Regional Transit Authority, which operates 27 RTA stops within the DGA.

Energy Generation and Supply

The Energy Generation and Supply layer includes nuclear power plants, power plants, and transmission lines from Massachusetts Geographic Information Systems and the United States Geological Survey databases.

There is one power plant, Barnstable WWTP, at 617 Bearses Way and eight transmission lines within the DGA.

Summary of Contributions to Environmental Burden

In summary, there are 19 MassDEP major air and waste facilities, 54 M.G.L. c. 21E sites, one MassDEP site with AULs, 22 UST systems, 19 EPA facilities, three major routes and one bikeway that intersect the DGA, a commuter rail stop, several parking lots, Cape Cod RTA stops, and one power plant.

The Project is not anticipated to impact or contribute to any of the listed potential sources of pollution described above nor add to them. Similarly, the Project will not materially exacerbate the existing health burden of the EJ communities around the Project site.

5.16.2.2.1.3 Climate Adaptation (RMAT)

In accordance with MEPA's *Interim Protocol on Climate Change Adaptation and Resiliency* (dated October 1, 2021), the Proponent evaluated the potential climate change impacts on the Project via the RMAT Climate Resilience Design Standards Tool. See the RMAT output based on the DEIR Project updates in **Appendix G** – RMAT Tool Output.

The RMAT Tool provides the Project with information about sea level rise/storm surge, heat, and extreme precipitation impacts. A more detailed analysis of climate change and the RMAT output is provided in Section 5.7.1. Analysis of the RMAT Tool estimated risk ratings for climate parameters (e.g., temperature, precipitation) does not indicate an elevated climate risks for EJ populations within the DGA for the Project Site.

5.16.2.2.1.4 EJSCREEN Analysis

An EJ Screen analysis was conducted using the buffer function to create a 1-mile buffer around the Project site. The Community Report is attached as **Appendix K**.

EJ Screen presents results for environmental and socioeconomic indicators. There are 13 environmental indicators and seven socioeconomic indicators. In addition, data are presented in terms of EJ and supplemental indexes that combine specific environmental indicators with socioeconomic indicators to evaluate combined vulnerabilities. EJ Screen analyses are conducted at the Census "block group" level, which is the finest level of detail. Analyses can also be conducted using a buffer around a point, which is what is presented here. EJ Screen will aggregate portions of the block groups that the buffer intersects, weighted by population to provide representative data for that buffer region.

EJ Screen analyses are presented in terms of percentiles, which is a relative term that compares each block group with either the rest of the state, or the whole US. Importantly, EJ Screen is meant to be used as a screening level analysis and EPA has determined that the 80th percentile is an appropriate percentile to identify areas that warrant further investigation.

In the EJ Screen Technical Document,[14] EPA notes that "a high percentile is not necessarily a real concern from a health or legal perspective. To understand the actual health or other implications of any screening results requires looking at the actual data and the indicator represents and looking at other relevant data if available." Other data that EPA refers to includes whether the air pollution measurements exceed health-based standards.

EPA notes that there are a number of limitations to an EJScreen analysis. These limitations are generally associated with uncertainty in the underlying data for a particular indicator since often data are not available at the block group level. Also, as noted by EPA, many of the indicators are screening-level proxies of potential exposures and health risks, and do not represent actual exposures or health risks. This is especially true for the "proximity" indicators such as the indicator for traffic.

The EJScreen analysis results presented in **Appendix K** show that none of the environmental and socioeconomic indicators within one mile of the Project Site are elevated (> 80th percentile) in the block groups within one mile of the Project Site. Overall, the EJ Screen analysis suggests that there are no potential environmental vulnerabilities in the communities within one mile of the Project.

[14] EJSCREEN Technical Documentation 2014 - environmental justice screening and mapping tool (epa.gov)

5.16.3 Children's Environmental Health and Safety Risks

As specified in the FAA's 1050.1F Desk Reference, and in accordance with Executive Order 13405, Protection of Children from Environmental Health Risks and Safety Risks, the FAA requires the identification and assessment of the potential health and safety risks that could disproportionately affect children. Such risks relate to other environmental resource categories such as air quality and noise. Project risks to children are discussed in Section 6.12.

According to the US Census Bureau, the population of Barnstable County was about 232, 411 in 2021 and about 14% of the population is under 18 years of age, which is lower than the rate for all of Massachusetts (~20%). Approximately 10% of these children are below the poverty line in the County, compared to about 13% in Massachusetts.

There are several schools and seasonal camps near the Airport, including two schools about two miles southwest of the Airport (Hyannis West Elementary School and Barnstable intermediate School), two schools about one mile south of the Airport (Barnstable Community Innovation and Sturgis Charter Public School), and two schools about three miles northeast and two miles east of the Airport (Marguerite E Small Elementary and Barnstable West Elementary School, respectively). The Cape Cod Volleyball camp is two miles to the southwest of the Airport and Camp Greenough and Camp Wingate Kirkland are three and four miles to the northeast, respectively.

5.17 Hazardous Materials, Solid Waste, and Pollution Prevention (MEPA/NEPA)

Precautions against hazardous material releases at the Airport are of high importance due to the necessity of such materials for the operation and maintenance of aircraft, and the location of the Airport in drinking water recharge zones. This section provides information regarding storage and use of oil and/or hazardous materials (OHM) at the Airport.

In accordance with Code of Federal Regulations 40, Subpart 112 (40 CFR 112), a Spill Prevention, Control, and Countermeasure Plan (SPCCP) is maintained by the Airport to minimize the risk associated with bulk storage and transfer of Oil and Hazardous Materials (OHM). The Airport also maintains a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the U.S. EPA National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity. Copies of the SWPPP and SPCC plans are attached in **Appendices K and L,** respectively.

5.17.1 Fuel Storage

During typical operations, the Airport accepts, stores, handles, and transfers a variety of OHM. The Airport has implemented several programs to minimize the environmental impact associated with Airport operations, including the implementation of a SWPPP, in accordance with the U.S. EPA NPDES, a SPCC Plan, and several Best Management Practices (BMPs), to reduce the potential for a release of OHM to the Environment.

5.17.1.1 OHM Storage

OHM is staged within containers consisting of drums, ASTs, and USTs, which range in sizes from 55 gallons to 10,000 gallons. A summary of the OHM stored at the Airport is presented in **Tables 5.17-1 to 5.17-3**. Current storage locations are also shown on the Oil and Hazardous Materials Storage Map prepared by Horsley Whitten Group in **Appendix L, Figure 2**.

5.17.1.1 OHM Storage during Aircraft Refueling

During aircraft refueling activities, the petroleum products are transferred from the fuel farm or other sources by the Airport as well as tenant mobile refuelers. Further information regarding the procedures is described in the SPCC Plan (see **Appendix M**). Specific characteristics of each mobile refueler are described in **Tables 5.17-2 and 5.17-3**. All mobile refueler trucks are equipped with absorbents, drip pans, magnetic catch basin covers, and oil booms and can respond to a petroleum spill of less than 10 gallons during refueling activities. Spills greater than 10 gallons or those that trigger a reporting obligation to MassDEP are completed under the direction of the on-call Licensed Site Professional (LSP).

Table 5.17-1 Airport Virgin Petroleum Storage

Operator	Location	Product	Tank Type	Spill Protection	Volume (Gallons)
Rectrix / Air Cape Cod	Gate P fuel farm	Avgas / Jet A	AST	Overfill protection, steel secondary containment	10,000 /10,000
Griffin Avionics	Griffin fuel island	Avgas	UST	Overfill protection, cathodic protected steel, interstitial monitoring	10,000
Cape Air	Inside Cape Air Hangar	Avgas	Portable AST	Spill containment pallet	100
Hertz Car Rental	Barnstable Road – Service Lot	Unleaded gasoline	UST	In tank monitor	10,000
Barnstable Municipal Airport	Gate F fuel farm	Unleaded gasoline	AST	Overfill protection, steel secondary containment, interstitial monitoring	4,000
		Diesel	AST		4,000
		Jet A	AST		20,000

Notes:
AST - aboveground storage tank
UST - underground storage tank
Source: Barnstable Municipal Airport Spill Prevention, Control, and Countermeasure Plan, 2020.

Table 5.17-2 Airport and Tenant Mobile Refuelers

Operator	Product	Number of Refueler Trucks	Truck Designation	Storage Capacity (Gallons)
Barnstable Municipal Airport	Jet A	3	55931 / 55932 / 5251	5,000 / 5,000 / 3,000
Rectrix / Air Cape Cod	Avgas	1	44219	1,500
Rectrix Aerodrome	Jet A	1	5693	3,000
Cape Air	Avgas	1	4298	1,500
Griffin Avionics	Avgas	2	612 / 4134	620 / 1,200

Notes:
AST – aboveground storage tank
UST – underground storage tank
Source: Barnstable Municipal Airport Spill Prevention, Control, and Countermeasure Plan, 2020.

Table 5.17-3 Other Airport OHM Storage Locations

Operator	Location	Product	Storage Vessel Type	Spill Protection	Volume (Gallons)
Barnstable Municipal Airport	Outside Airport ARFF/SRE Building	Waste Oil / Anti-freeze	AST	Leak detection, double walled with reinforced concrete	350 / 150
	Inside Airport ARFF/SRE Building	Antifreeze / 15W-40 / Grease / Hydraulic Oil / ATF / 5W-30 Synthetic / Waste Oil	Drums	Spill Containment Pallet	55
Rectrix / Air Cape Cod	Gate P Fuel Farm	Waste absorbent material / waste Jet A / Avgas	Drums	Spill Containment Pallet with overhead cover	55 / 55
Rectrix Aerodrome	Inside Rectrix Hangar	Jet A / Reclaimable Jet A Fuel / Waste Oil / Waste Absorbent	AST /Drums	Double walled / Spill Containment Workstation with Lid	55 / 55
Griffin Avionics	Inside Griffin Hangar	Used Oil filters	Drums	Spill Containment Pallet	55
Cape Air	Inside Cape Air Hangar	Waste oil	AST	Overflow Detection, Double Walled	500
		Waste oil / Hydraulic Oil / Used Oil filters /Antifreeze	Drums	Spill Containment Pallet	55
Allies Air	Inside Allies Air Hangar	Waste Oil	Drums	Spill Containment Pallet	55
AMA Nantucket Inc.	Inside Hangar Nantucket Inc. Hangar	Waste Oil / Mineral Spirits	Drums / Drums	Spill Containment Pallet / Spill Containment Pallet	55 / 55
Cape Flight Instruction	Inside Hangar	Waste oil / Antifreeze / used oil filters	Drums	Spill Containment Pallet	55
Avis Car Wash	Barnstable Road – Service Lot	Car Washer Fluid	AST	OWS	250
Hertz Car Wash	Barnstable Road – Service Lot	Car Washer Fluid	AST	OWS	250

Notes:
AST - aboveground storage tank
OWS – oil water separator
ARFF – airport rescue and fire fighting
SRE – snow removal equipment
Source: Barnstable Municipal Airport Spill Prevention, Control, and Countermeasure Plan, 2020.

5.17.2 Database Reviews

An Environmental Data Resources (EDR) report was acquired to obtain information on documented releases of OHM that could potentially result in environmental impacts at the Airport. Information related to releases of OHM at and up to approximately 1,000 feet of the Airport property was reviewed. The EDR report included information from state/federal databases, historical maps, and MassDEP records of Disposal Sites (Sites) located within one mile of the Airport property. Based on the information reviewed, a total of 64 Sites were identified that were located at or adjacent to the Airport property (**Figure 5.17-1**). As applicable, the MassDEP Waste Site & Reportable Releases Data Portal was also reviewed to obtain additional information. A summary of findings from the database reviews is presented in **Appendix N**. A copy of the EDR report is attached in **Appendix O**.

5.17.2.1 Airport Property: Open Sites

Based on the EDR report, two Sites (see **Figure 5.17-2**) are located on Airport property and are currently undergoing response actions:

- **Release Tracking Number (RTN) 4-26347:** This RTN is associated with historical releases of per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane to soil and groundwater. The release was reported to MassDEP on November 10, 2016. Response actions are ongoing and include assessment and remediation, including soil capping at two areas on Airport property where Aqueous Film Forming Foam (AFFF) containing PFAS was used. More information is discussed in Section 5.17.3.
- **RTN: 4-28577:** This RTN is associated with the presence of Polycyclic Aromatic Hydrocarbons (PAHs) and lead in surficial sediments above the MassDEP Sediment Screening Criteria at Upper Gate and Lewis Ponds. The sediments in the ponds were sampled as part of the North Ramp Phase II Comprehensive Site Assessment (CSA) required for the investigation and remediation of a hydrocarbon and chlorinated solvent plume at the Airport's North Ramp. Because it was unclear if the source of contamination was from the release at the North Ramp or from typical compounds found in stormwater runoff on the Property, MassDEP assigned RTN 4-28577 on October 29, 2020 to the sediment investigation. According to the November 2021 Phase I Initial Site Investigation (ISI) report, a proposed Phase II Scope of Work was drafted and includes researching historical documents to determine a potential source, sampling additional ponds to evaluate anthropogenic background conditions, sampling runoff water from floor drains, and performing an ecological risk assessment. Results of this work have been documented in a Permanent Solution Statement. This work is scheduled to start in Fall of 2023.

RTN 4-937
RTN 4-20021
RTN 4-26179
RTN 4-190
RTN 4-11270
RTN 4-29807
RTN 4-1179
RTN 4-14213
RTN 4-20777
RTN 4-26692
RTN 4-368
RTN 4-11988
RTN 4-435
RTN 4-1080
RTN 4-28856
RTN 4-28577
RTN 4-21315
RTN 4-1081
RTN 4-23484
RTN 4-11841
RTN 4-823
RTN 4-14312
RTN 4-12911
RTN 4-12687
RTN 4-12048
RTN 4-14747
RTN 4-15600
RTN 4-28769
RTN 4-26225
RTN 4-26358
RTN 4-10187
RTN 4-899
RTN 4-26340
RTN 4-26347
RTN 4-23065
RTN 4-15715
RTN 4-17651
RTN 4-18156
RTN 4-461
RTN 4-14472
RTN 4-10573
RTN 4-15370
RTN 4-824
RTN 4-13433
RTN 4-934
RTN 4-25602
RTN 4-24153
RTN 4-14860
RTN 4-976
RTN 4-21245
RTN 4-27674
RTN 4-29244
RTN 4-26
RTN 4-13202
RTN 4-14306
RTN 4-392
RTN 4-19452
RTN 4-25408
RTN 4-13201
RTN 4-11972
RTN 4-15997
RTN 4-18891
RTN 4-19209
RTN 4-862
RTN 4-13422
RTN 4-26164
RTN 4-251
Mary Dunn Pond
Barnstable Municipal Airport
HYANNIS
Mill Pond Marshes
Airport Way
Flint Rock Rd
Mary Dunn Rd
Barnstable Rd
Falmouth Rd
Route 28
Washington Ave
Gill Ave
Lincoln Ave
Hawes Run
Higgins Crowell Rd
Yarmouth Rd
Ivanough Rd
Capetown Plaza
Southwind Plaza
Independence Dr
Attucks Ln
Iyanough Rd
Bearses Way
Pitcher's Way
Castlewood Circle
Schooner Ln
Enterprise Rd
Corporation St
Walton Ave
Quaker Rd
Compass Circle
Walnut St
Spruce St
Mulberry St
Maple St
Linden St
Oak St
Locust St
Grove St
Kelley Rd
Alicia Rd
Baxter Rd
Bearse Rd
Kings Way
Ridgewood Ave
Pondview Ave
Buck Island
Mill Pond Rd
Town Brook Rd
Old Yarmouth Rd
Bodkin Rd
Stellato Dr
Joseph
Jeffrey
Jarvis Rd
Rosary Ln
Adams Rd
Coolidge Rd
Camp St
Cand
Rd
Ave
St
Dr
Way
Ln
Cir
Pl
Ct
Pond
Breeds
Hallett Rd
Jarvis St
Gill Ave
Hawes Run
Washington Ave
Coolidge Rd
Lincoln Ave
Yarmouth Rd
Route 28
Mill Pond Marshes
Buck Island
Pondview Ave
Ridgewood Ave
Old Yarmouth Rd
Bodkin Rd
Stellato Dr
Joseph
Jeffrey
Jarvis Rd
Rosary Ln
Adams

LEGEND:

- PROJECT AREA
- APPROXIMATE MASSDEP DISPOSAL SITE BOUNDARIES (DASHED WHERE ESTIMATED)
- (W) PUBLIC WATER SYSTEM WELL

NOTES:

1. FEATURES ARE APPROXIMATE.
2. RTN = RELEASE TRACKING NUMBER.

SOURCE:

1. PROJECT AREA DIGITIZED FROM ENVIRONMENTAL NOTIFICATION FORM, CAPE COD GATEWAY AIRPORT, EPSILON ASSOCIATES, INC., NOVEMBER 30, 2022.
2. PUBLIC WATER SYSTEM WELL DATA FROM MASSGIS (BUREAU OF GEOGRAPHIC INFORMATION), COMMONWEALTH OF MASSACHUSETTS EOTSS. FEBRUARY 13, 2023

0 1000 2000

SCALE, FEET

Draft Environmental Impact Report
Cape Cod Gateway Airport
Hyannis, Massachusetts

Epsilon Associates, Inc.
Manyard, Massachusetts

GEI Consultants

ACTIVE MASSDEP DISPOSAL SITE BOUNDARIES WITHIN AND ADJACENT TO THE AIRPORT PROPERTY

Project 2203788

September 2023 **Figure 5.17-2**

FINKELMAN, ADAM \\geiconsultants.com\data\Data_Storage\Working\EPSILON ASSOCIATES\2203788 CC Gateway Master Plan\00_CAD\Figures\EIR\2203788-EIR-Figs.dwg - 9/13/2023

5.17.2.2 Airport Property: Closed Sites

The EDR report identified 15 Sites that have achieved regulatory closure under the Massachusetts Contingency Plan (MCP at 310 CMR 40.0000):

- 3 achieved a Class A-1 Response Action Outcome (RAO)
- 5 achieved a Class A-2 RAO
- 7 achieved a Permanent Solution with no Conditions (PSNC)
- 1 submitted a Downgradient Property Status (DPS)

Barnstable Municipal Airport, Hanger Bay #1 RTN: 4-12048: Airline Realty Trust submitted a DPS for releases of chlorinated solvents and petroleum compounds to soil and groundwater. The release was attributed to several upgradient sources including leaching pits at the Cape Air Hanger and Griffin Air, and jet fuel contamination associated with former USTs. This RTN was linked to RTN 4-823 in October 1997. RTN 4-823 was associated with releases at the Cape Air Hanger and response actions included disposal of petroleum containing liquid and solids from leaching pits, installation of a soil vapor extraction and air sparging system to treat petroleum-contaminated soil and groundwater, additional soil and groundwater sampling, and injection of remedial additives to treat the chlorinated solvents and petroleum compounds. Following response actions, the RTN 4-823 achieved regulatory closure with a PSNC.

Based on the information reviewed, none of the closed sites required conditions or deed restrictions, such as an Activity and Use Limitation (AUL), to achieve closure.

5.17.2.3 Adjacent to the Airport Property: Open Sites

Based on the EDR report, six Sites with addresses within approximately 1,000 feet of the Airport are currently undergoing response actions:

- Former Charter Station No. 6843, 258 Iyannough Road, Hyannis, MA

RTN 4-26: This RTN is associated with a release of gasoline and benzene, toluene, ethylbenzene, and xylene (BTEX) to soil and groundwater from leaking underground storage tanks at the former gasoline station. The release was reported to MassDEP on October 15, 1987. Response actions have included additional assessment, excavation and disposal of petroleum-impacted soils, and installation of a groundwater pump and treatment system. Following response actions, the Site achieved a Temporary Solution with a Class C-1 RAO in July 2010. Based on the information reviewed, the Disposal Site boundary extends onto the Airport property. Therefore, this release is likely impacting soil and/or groundwater conditions at the Airport property.

- Atwood Oil, 33 Brooks Road, Barnstable, MA

RTN 4-824: This RTN is associated with releases of petroleum to soil and groundwater from the historical use of the property as a bulk fuel plant. The release was first reported to MassDEP on November 1, 1989. Response actions included soil and groundwater sampling, removal of drums and USTs, soil excavation for offsite disposal, installation of a soil vapor extraction and air sparging system, installation of a barrier filter trench, injecting remedial additives to groundwater, and installing a cap over select contaminated areas. The Site achieved a Temporary Solution with a Class C-1 RAO in August 2012. Groundwater monitoring for dissolved-phase petroleum compounds is ongoing.

According to the latest Post-Temporary Solution Status Report (dated June 26, 2019), the release did not impact groundwater conditions at the Airport property.

RTN 4-15370: This RTN was reported to MassDEP on March 20, 2000, for release of an unknown chemical of unknown type from 55-gallon drums located at 33 Brooks Road. This RTN was linked to RTN 4-824, and a Completion Statement was received by MassDEP in August 2000.

- Former Shell-Branded Service Station #137771, 381 Camp Street, Hyannis, MA

RTN 4-1179: This RTN was listed as a Location to be Investigated (LTBI) on July 15, 1992. In January 1995, results of a Phase I Initial Site Investigation concluded that concentrations of BTEX were detected above reportable concentrations in soil and groundwater. Response actions have included additional assessment, and installation of an air sparging/soil vapor extraction remediation system. The site is currently in Remedy Operation Status. Based on this Site's location to the Airport (i.e., downgradient), and the location of disposal site boundary, it is unlikely that the release is impacting soil and/or groundwater conditions at the Airport property.

RTN 4-14213: This RTN is associated with a detection of the PAH benzo(b)fluoranthene above its applicable reportable concentration for soil (RCS-1) in a sidewall confirmatory sample, as part of a waste oil UST removal, on September 25, 1998. RTN 4-14213 was linked to RTN 4-1179 on October 1, 1999, and is currently being managed by RTN 4- 1179.

- Barnstable County Fire Training Academy, Mary Dunn Road, South Flint Rock Road, and Airport Way, Barnstable, MA

RTN 4-190: This RTN is associated with the release of petroleum compounds to soil and groundwater from historical leaking USTs and surficial spills. The release was first reported to MassDEP on August 25, 1986. Response actions included soil and groundwater sampling, and soil and groundwater treatment via operation of a pump and treat and a soil vapor and air sparging system. The site achieved a Temporary Solution with a Class C RAO in 2001 and is in Remedy Operation Status, which includes monitoring groundwater for petroleum compounds to evaluate monitored natural attenuation. Based on the groundwater sampling results from the latest report, the release has impacted the Airport property. Response actions are ongoing by both the RP and MassDEP.

RTN 4-20021: This RTN is associated with a release of perchlorate to soil and groundwater from a stockpile of flares used for training purposes. The release was first reported to MassDEP on August 25, 2006. Response actions included groundwater sampling and installation of a recovery well as part of a pump and treat system. The treatment system was shut down after perchlorate concentrations were persistently below MCP standards, and an IRA Completion report was submitted to MassDEP on November 22, 2010. Based on the compliance status, this release is not likely impacting soil and/or groundwater conditions at the Airport property. This Site is linked to RTN 4-190.

RTN 4-26179: This RTN is associated with the historical release of PFAS to soil and groundwater and is being managed under an Immediate Response Action (IRA). The release was first reported to MassDEP on August 4, 2016. Immediate Response Actions included soil Hot Spot removal, sitewide capping, select building demolition, and operation/monitoring of a groundwater pump and treat system. Based on the results of groundwater samples collected from the Airport property and the assumed groundwater flow direction, this release is likely impacting soil and/or groundwater conditions at the Airport property. The Site is currently in Phase II and response actions are ongoing by both the RP and MassDEP. This release is also linked to RTN 4-190. More information is discussed in Section 5.17.3.

5.17.2.4 Adjacent to the Airport Property: Closed Sites

EDR also identified 31 Sites that achieved regulatory closure under the MCP:

- 9 achieved a Class A-1 RAO
- 9 achieved a Class A-2 RAO
- 1 achieved a Class B-1 RAO
- 6 achieved a PSNC
- 1 achieved a DEP No Further Action (NFA)
- 2 achieved a DEP Not a Disposal Site (NDS)
- 2 achieved a LSP No Further Action (NFA)
- 1 achieved closure via a Utility Release Abatement Measure (URAM)
- 1 site (**RTN 4-25408**) achieved closure via a Permanent Solution with Conditions (PSC) related to the presence of lead associated with historic fill. No information was available regarding the extent of historic fill outside the disposal site boundary, which is not located on Airport property.

The following RTNs were filed with a DPS and listed the Airport property as a potential upgradient source:

- 210 Yarmouth Road, Hyannis, Massachusetts

RTN 4-13201: On January 26, 1998, Mrs. Milton Babcock submitted a DPS associated with TPH and naphthalene detections above the applicable GW-1 standard from monitoring wells located on her property (Grandpa's Bikes). The property owner indicated that no more than 5 quarts of waste oil was generated on a yearly basis. The source of the petroleum contamination was attributed to several possible upgradient sources, including the Barnstable Municipal Airport (RTN 4-823). Response actions for RTN 4-823 were conducted under a RAM Plan and included installation of a soil vapor extraction and air sparging system and post remediation groundwater monitoring at the Airport property. Following response actions, the site achieved regulatory closure with a PSNC.

- 202 Yarmouth Road, Hyannis, Massachusetts

RTN 4-13202: On July 23, 1998, Mr. Douglas E. MacDonald submitted a DPS associated with TPH and naphthalene detections above the applicable GW-1 standard from a monitoring well located on his property (a car and boat sales lot with a garage). Mr. MacDonald indicated that no fuel USTs have been present at the property. The source of the petroleum contamination was attributed to several possible upgradient sources, including the Barnstable Municipal Airport (RTN 4-823).

- 95 Airport Road, Hyannis, Massachusetts

RTN 4-28856: On August 5, 2021, Group 1 Automotive submitted a DPS associated with PFAS detections in monitoring wells located at the property as part of a due diligence investigation. Based on an ASTM Phase I Environmental Site Assessment (ESA), no recent or historical site activities included the storage, use and/or discharge of PFAS compounds. The sources of PFAS in groundwater were attributed to two potential upgradient sources, including the Cape Cod Municipal Airport (RTN 4-23647) and the Barnstable County Fire Training Academy (RTN 4-26179).

The following sites adjacent to the Airport filed a DPS, but did not list the Airport as a potential upgradient source:

RTN 4-19452: Lot 147, 114 Iyannough Road, Hyannis, Massachusetts

RTN 4-392: Airport Exxon (Former BP Service Station), 230 Iyannough Road, Hyannis, Massachusetts.

GEI did not identify any Sites associated with an AUL. Information regarding these 30 Sites is summarized in **Appendix N** along with the EDR report.

5.17.3 Per- and Polyfluoroalkyl Substances

PFAS are part of a large family of organofluorine synthetic chemicals used in industry and consumer products since the 1940s. Due to their unique properties, including resistance to oil and water, and ability to withstand high temperatures, they have been used in a variety of applications such as food packaging, nonstick cookware, waterproof clothing, textiles, firefighting foam, and in certain manufacturing processes.

The substances of greatest concern are the longer-chain perfluoroalkyl acids (C6 to C10), such as perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), and products that can form these long-chain perfluoroalkyl acids. These compounds can be resistant to breakdown, migrate quickly in groundwater, and can bioaccumulate in the food chain. Although health risks posed by PFAS are still not completely understood, studies on laboratory animals and in people have shown that exposures to these compounds (particularly PFOA and PFOS) have been associated with a wide range of adverse health effects including reproductive, birth, developmental, behavioral, neurologic, endocrine, immunologic, metabolic, cardiovascular, and cancer outcomes.

Historic reports for the Airport indicate that a fluorotelomer-based AFFF (Chem-Guard 3% mil spec) containing PFAS was purchased and used by the Airport since the 1980s. AFFF was used by the Airport to respond to fires during aircraft accidents and during tri-annual drills and annual testing requirements to comply with FAA requirements. In 2016, the Airport purchased a foam testing system from ECOLOGIC™ to allow the FAA to verify the AFFF mixture without the need to spray the foam.

The Airport is currently assessing PFAS impacts to soil, groundwater, and sediment on and off Airport property from the historical use of AFFF for training and emergency response. The Airport is also assessing PFAS-impacted groundwater migrating onto the Airport and originating from plumes associated with upgradient sources.

5.17.3.1 Standards and Guidelines

Federal Guidelines

Between 2016 and 2022, the EPA set a non-enforceable health advisory level of 70 parts per trillion (ppt) for PFOS and PFOA in drinking water. In June 2022, the USEPA updated their health advisory by releasing the Final Drinking Water Health Advisories (HAs) for the following types of PFAS compounds: GenX, Perfluorobutanesulfonic acid (PFBS), and Interim HAs for PFOA and PFOS. No federal drinking water standards have been currently established for PFOS and PFOA.

State Standards

Hazardous Materials Regulated Under M.G.L Chapter 21E and the MCP

Under current state regulations (M.G.L. c.21E and the MCP [3104 CMR 40.0000]), MassDEP currently regulates six PFAS compounds in soil and groundwater: PFOA, PFOS, Perfluorodecanoic Acid (PFDA), Perfluoroheptanoic Acid (PFHpA), Perfluorohexanesulfonic Acid (PFHxS), and Perfluorononanoic Acid (PFNA). The RQs and RCs for PFAS are listed in Table 2 of the Massachusetts Oil and Hazardous Material List (MOHML), which can be found in Section 310 CMR 40.1600 of the MCP. For soils, each compound is regulated separately. For groundwater, because the Airport is located within a DEP-Approved Zone II public water supply area (Barnstable Water Company Maher Wellfield), category RCGW-1 applies. The RCGW-1 standard is 20 ppt for the sum of 6 PFAS listed above.

Massachusetts Maximum Contaminant Level (MCL)

In October 2020, the MassDEP set a drinking water Maximum Contaminant Level (MCL) of 20 ppt for the sum of six PFAS compounds (PFAS6), including: PFDA, PFHpA, PFHxS, PFOA, PFOS, and PFNA. This drinking water standard is set to be protective against adverse health effects for all people consuming the water.

5.17.3.2 Airport Regulatory History

Investigations for PFAS began in July 2016, when the Airport conducted an initial round of groundwater sampling at the request of MassDEP to assess impacts to soil and groundwater resulting from the Airport's historic use of AFFF. Six monitoring wells were installed at suspected PFAS and/or PFOA release areas, based on an understanding of the Airport's past use of AFFF or potential release locations. Concentrations of PFAS and PFOA were detected above laboratory detection limits in all six monitoring wells. At two of the six monitoring wells, the sum of PFOS and PFOA were detected above the EPA health advisory limit of 70 ppt. PFOS and PFOA were also detected above the EPA health advisory limit in an upgradient monitoring well on the western boundary of the Airport.

On November 10, 2016, MassDEP issued a Notice of Responsibility (NOR) to the Airport. The NOR requested that the Airport perform additional field investigations to:

- Evaluate source(s) of PFAS including PFOS and PFOA detected in groundwater at the Airport;
- Evaluate Source(s) of 1,4-dioxane detected in one monitoring well downgradient of the Airport on the Maher wellfield property; and
- Identify potential impacts to public water supply wells operated by the Hyannis Water District at the Mary Dunn and Maher wellfields (**Figure 5.4-4**).

MassDEP subsequently issued RTN 4-26347 to the release on November 10, 2016.

In response to the NOR, the Airport submitted an IRA plan in accordance with the MCP on December 16, 2016, and a Release Notification Form (RNF) on February 28, 2017. The IRA plan included a plan for additional soil and groundwater testing.

In June 2019, the MassDEP requested that the Airport modify the IRA plan to propose response actions to "reduce infiltration of precipitation through PFAS-impacted soil, such as temporarily capping the source areas; excavating and properly disposing of the PFAS-impacted soil; or some equivalent approach." In response, the Airport submitted an IRA Modification report to MassDEP in December 2019 that included details for installing caps in the Deployment Area and the Airport Rescue and Fire Fighting/Snow Removal Equipment (ARFF/SRE) Building Area, as shown in **Figure 5.17-3**.

The two caps were installed in September 2020 and cover an area of approximately 94,100 sf. These two capped areas cover a majority of the known source areas for PFAS in soils resulting from the historic application of AFFF by the Airport. The Airport continues to monitor PFAS concentrations in groundwater at and downgradient of the capped areas to measure their effectiveness. These results are presented every 6 months in status reports submitted to MassDEP.

5.17.3.3 PFAS Source(s)

The primary source of PFAS impacts to environmental media at the Airport is the historical use of PFAS-containing AFFF in various areas, including:

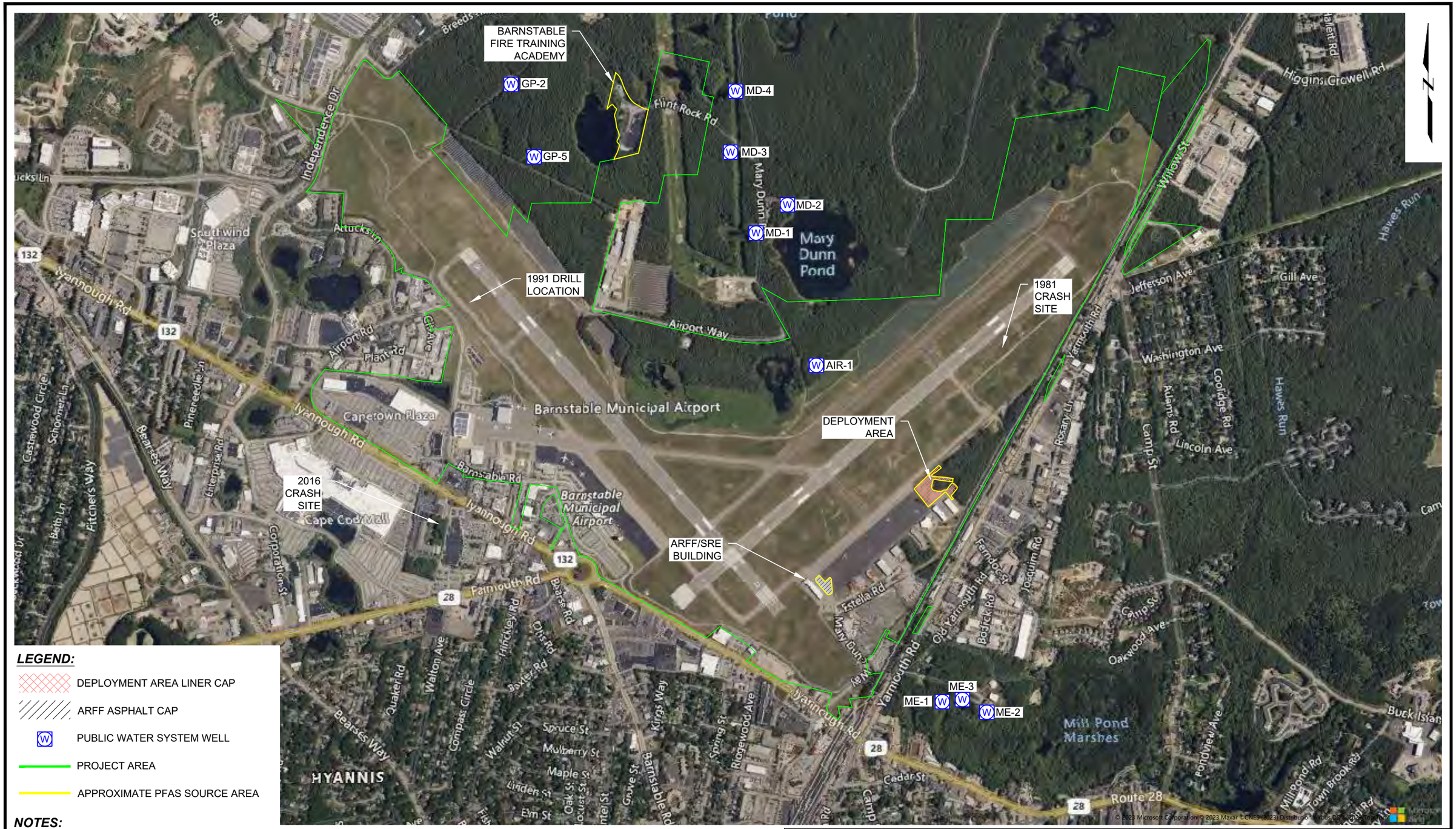
- **Deployment Area**: Historical training exercises using AFFF at the unpaved Deployment Area between 1991 and 2012;
- **ARFF/SRE Building**: Incidental spillage at the AARFF/SRE Building since 1996;
- **Incident Response**: AFFF use at aircraft incident responses in 1981 and 2016;
- **Barnstable Fire Training Academy**: PFAS-impacted groundwater from upgradient sources, including the Barnstable Fire Training Academy PFAS Release

Further information on these areas is provided below. The locations of these areas are shown in **Figure 5.17-3**.

<u>AFF Training Areas</u>

Deployment Area

The Deployment Area is an unpaved area adjacent to the East Ramp at the Airport (**Figure 5.17-3**). AFFF was used during tri-annual drills and annual compliance testing performed by the Airport between 1991 and 2015. The combination of tri-annual drills and annual compliance



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LEGEND:

- DEPLOYMENT AREA LINER CAP
- ARFF ASPHALT CAP
- PUBLIC WATER SYSTEM WELL
- PROJECT AREA
- APPROXIMATE PFAS SOURCE AREA

NOTES:

1. FEATURES ARE APPROXIMATE.

SOURCE:

1. PROJECT AREA DIGITIZED FROM ENVIRONMENTAL NOTIFICATION FORM, CAPE COD GATEWAY AIRPORT, EPSILON ASSOCIATES, INC., NOVEMBER 30, 2022.
2. PUBLIC WATER SYSTEM WELL DATA FROM MASSGIS (BUREAU OF GEOGRAPHIC INFORMATION), COMMONWEALTH OF MASSACHUSETTS EOTSS. FEBRUARY 13, 2023

0 1000 2000

SCALE, FEET

Draft Environmental Impact Report
Cape Cod Gateway Airport
Hyannis, Massachusetts

Epsilon Associates, Inc.
Manyard, Massachusetts

GEI Consultants

Project 2203788

PFAS SOURCE AREAS

September 2023 **Figure 5.17-3**

testing have contributed to the AFFF related PFAS impacts to soil and groundwater in this area. The Airport ceased use of AFFF in the tri-annual training drills in 2016 with the purchase of the foam testing system by ECOLOGIC™.

Concentrations of PFAS in soil and groundwater within the Deployment Area were reported above their applicable Method 1 Soil and Groundwater Standards.

A geomembrane cap was installed at this area in September 2020 to reduce infiltration of precipitation through PFAS-impacted soil (**Figure 5.17-3**). The cap area covers the majority of known PFAS in soil source areas relating to the historic use of AFFF; however, concentrations of PFAS above Method 1 Soil standards are still present in soil outside the capped area. Inspections of the cap are performed by the Airport every six months. Results of the most recent inspection performed in March 2023 Indicated that the sand and loam protective layer overlying the geomembrane cap were intact and no signs of significant erosion were observed.

The Airport continues to investigate PFAS concentrations in soil outside the capped area. Additionally, the Airport performs bi-annual groundwater sampling to monitor the plume originating from the Deployment Area.

1991 Drill Area

All tri-annual drills occurred at the Deployment Area, with the exception of the 1991 drill, which occurred in an area adjacent to the northwest portion of Runway 15/33. Laboratory analytical results from shallow soil samples collected from this area in December 2018 did not indicate the presence of PFAS above background levels. No further assessment has been conducted in this area since 2018.

ARFF/SRE Building

The ARFF/SRE Building was constructed in 1996 for storage of emergency response vehicles, AFFF, and firefighting apparatus. This building was investigated and determined to be a source of PFAS and assumed to have been released in the building as a result of accidental spillage, equipment cleaning, or other means. Interior floor drains inside the building had historically discharged to grassy area adjacent to the building, which leached into the underlying soil and groundwater. Concentrations of PFAS in soil and groundwater were reported above their applicable Method 1 Soil and Groundwater Standards in this area.

An asphalt cap was installed over the former grassy area adjacent to the building in September 2020 to reduce infiltration of precipitation through PFAS-impacted soil (**Figure 5.17-3**). In addition, the interior floor drains were closed and connected to a permitted discharge to the Barnstable Wastewater Treatment Plant. The cap area covers the majority of known source

area of PFAS- impacted soil relating to the historic use of AFFF outside the ARFF/SRE Building; however, concentrations of PFAS above Method 1 Soil standards are still present in soil outside the capped area. Inspections of the cap are being performed by the Airport every six months.

Airport Crashes

The following two instances of AFFF use during aircraft accidents were noted by personnel working at the Airport since 1980:

- **Runway 24**: A 1981 crash of a Beech 18 aircraft east of runway 24 between Willow Street and the Airport; and
- **Rental Car Area**: A 2016 crash of a Cirrus aircraft in the parking lot of the rental car facility west of the terminal building. Approximately 335 gallons of AFFF (10 gallons of 3% AFFF concentrate and 325 gallons of water) was used during the crash response. The information reviewed indicated that the AFFF was contained within a solid bottom manhole, and subsequently disposed of.

No further information regarding additional response actions in these areas was available in the information reviewed.

Upgradient Sources

The information reviewed indicated that a groundwater plume from the upgradient Barnstable Fire Training Academy PFAS Release Site (RTN 4-26179) and other unknown upgradient locations extend onto the Airport property. These upgradient releases are unrelated to the Airport's AFFF PFAS plume. Results of groundwater analytical testing at several wells located hydraulically upgradient of the Airport have detected concentrations of PFAS exceeding the MassDEP's MCL of 20 ppt. These upgradient releases also appear to be contributing to PFAS impacts detected at the Maher Well field. Based on the information reviewed, response actions are being performed by the Barnstable County Commissioners to address these releases. More information is discussed in Section 5.17.3.4.

5.17.3.4 Soil and Groundwater Investigations

Information from Airport resources, including when AFFF use occurred for training purposes or during an aircraft accident was used to develop a sampling plan to assess the nature and extent of PFAS at the Airport. Since 2016, the Airport has conducted many investigations to delineate the extent of PFAS impacts to soil and groundwater both on and off Airport property. As part of this effort, a review of AFFF use was performed to determine if AFFF use occurred for training purposes or during an actual aircraft accident.

The Airport currently routinely tests for 20 to 24 PFAS compounds which include the six PFAS compounds currently regulated by MassDEP. Investigations are ongoing and status reports documenting response actions at the Airport are submitted to MassDEP Bureau of Waste Site Cleanup (BWSC) every 6 months.

PFAS Impacts to Soil

As discussed in Section 5.17.3.4, historical use of AFFF has resulted in concentrations of PFAS in soil above their applicable MCP Method 1 S-1 Soil Standards at two areas of the Airport: the Deployment Area and the ARFF/SRE Building.

At these two areas, soil with PFAS concentrations above applicable MCP Method 1 S-1 Soil Standards was detected up to 16 feet below grade. These areas were capped in September 2020 to reduce infiltration of stormwater into the PFAS-impacted soil.

Concentrations of PFAS above Method 1 Soil standards are also present in soil outside of the two capped areas. The Airport intends to perform further evaluation of these areas as part of future response actions.

The Airport also performed an investigation to evaluate the background concentrations of PFAS in soil. Based on the information reviewed, 20 samples were collected from areas on and off the Airport property. The result of the sampling indicated that PFAS from multiple on and offsite sources, including from atmospheric deposition, are contributing to the presence of PFAS in soil at the Airport and throughout the Town of Barnstable. One background sample collected at the Airport, and eight collected off Airport property exceeded the applicable Method 1 Soil Standards for various PFAS compounds. PFAS was detected in 19 of the 20 samples collected.

The Airport and other Responsible Parties continue to investigate the contribution of upgradient, off-Airport PFAS sources to soil and groundwater at the Airport. Based on current data, the vertical extent of PFAS impacted media (soil and groundwater) from contribution of upgradient sources is estimated to be from the ground surface to approximately 56 feet below grade.

PFAS Impacts to Groundwater

Contributions of PFAS in groundwater are resulting from both on-Airport and off-Airport sources. Currently known on-Airport sources include the ARFF/SRE Building and Deployment Area. PFAS concentrations in groundwater at these two areas have been reported above the Method 1 GW-1 standard. As discussed above, these areas were capped in September 2020 to reduce infiltration of stormwater through the PFAS-impacted soil. Installation of the two caps has resulted in a 75-82 percent decrease in the concentration of total PFAS in groundwater that is migrating from beneath the capped area. These results indicate that the cap is achieving the goal of reducing PFAS leaching from the soil into the underlying groundwater

that was resulting from stormwater infiltration. Based on a measured southeasterly groundwater flow direction, the PFAS plume from these areas is presumed to be migrating toward the Maher Wellfield.

Off-Airport sources of PFAS in groundwater include the Barnstable Fire Training Academy and other unknown sources. The Airport is using forensic techniques to determine if PFAS in the groundwater on the Airport Property is from the Airport or from off-site sources. In September 2020, the Airport submitted groundwater samples to Batelle Memorial Institute of Columbus, Ohio (Batelle) from six monitoring wells screened at various depths at the Maher Wellfield for forensic PFAS analysis. Concentrations of PFAS were reported above the Method 1 GW-1 standard in all six monitoring wells. According to the Batelle report, groundwater samples collected from monitoring wells screened shallow (from approximately 17 feet to 27 feet) were representative of the Airports PFAS Plume. Samples collected from monitoring wells screened deeper (from approximately 32 feet to 70 feet) were representative of upgradient non-Airport related sources (i.e., the Barnstable Fire Training Academy and others). In summary, it appears that the Maher Wellfield has PFAS contributions from on-Airport and off-Airport sources.

Response Actions to assess PFAS contamination from both on-Airport and off-Airport sources are currently ongoing.

5.17.4 Solid Waste

Solid waste is generated through various airport operations and is managed in accordance with local, state, and federal regulations. Solid waste at the Airport is routinely collected by Nauset Disposal and transported to the Barnstable Transfer Station, located approximately 5.5 miles southwest of the Airport.

5.17.5 Asbestos

Due to the age and material at the Airport, it is suspected that asbestos may be present in materials if installed before 1981. Asbestos is a naturally occurring natural fiber that is used in numerous building materials and vehicles products for its strength and its ability to resist heat and corrosion. If asbestos is inhaled and becomes airborne, it can be harmful to individuals. Examples of these materials, as well as other presumed asbestos-containing materials are:

- Thermal system insulation
- Roofing and siding shingles
- Vinyl floor tiles
- Plaster, cement, putties, and caulk
- Ceiling tiles and spray-on coatings
- Industrial pipe wrapping
- Heat-resistant textiles
- Automobile brake linings and clutch pads

It is not known if an asbestos survey was performed at the Airport to identify the presence of potential asbestos containing materials (ACM). A comprehensive survey of each proposed asbestos area for compliance with the EPA National Emissions Standards for Hazardous Air Pollutants for asbestos is required for all structures to be thoroughly inspected for ACM prior to demolition or renovation activities. An asbestos survey will be needed for the purpose of identifying visible, accessible suspect ACM and materials that may be required to be abated prior to any proposed airport renovation activities.

- Friable and non-friable ACM on all buildings through various airport operations.
- Lead Based Paint (LBP) at detectable levels on all painted surfaces that will either be impacted by demolition or that will become exterior wall surfaces following demolition.

Sample analysis for suspect ACM and LBP will be performed using Polarized Light Microscopy with Dispersion Staining in accordance with the EPA Method 600/M4-82-020, or EPA Method 600/R-93/116. All work will be performed by a qualified and licensed asbestos inspector(s) who has completed an EPA approved training course for building inspection.

Chapter 6.0

Environmental Consequences

6.0 ENVIRONMENTAL CONSEQUENCES

This Chapter discusses the reasonably foreseeable environmental impacts of the proposed action, the no action alternative, and other alternatives being considered in detail. The discussion of environmental impacts focuses on substantive issues and provides sufficient evidence and analysis for determining whether to prepare an EIS or a FONSI (see 87 FR 23453, CEQ Regulations). Additionally, this Chapter includes information demonstrating compliance with applicable requirements and identifies permits, licenses, other approvals, or reviews that apply.

Federal Aviation Administration (FAA) Order 1050.1F, Environmental Impacts: Policies and Procedures (Order 1050.1F) and Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions (Order 5050.4B) define the form and content of Environmental Assessments.

The review of the environmental consequences associated with the proposed Projects in this chapter is also consistent with requirements of the Massachusetts Environmental Policy Act (MEPA) implementing regulations (301 Code of Massachusetts Regulations [CMR] 11.00) and the Secretary's Certificate on the proposed Projects' Environmental Notification Form (ENF) (EEA# 16640).

Environmental consequences for this EA/EIR have been determined by comparing anticipated environmental conditions in the Project area after development and to the environmental conditions if no project were to be developed (i.e., the "No-Action Alternative").

The environmental consequences identified within each impact category for the above alternatives include the consideration of the following:

- Direct Impacts – Direct impacts are those which are caused by the proposed action and occur at the same time and place (40 CFR 1508.8[a]).
- Indirect Impacts – Indirect impacts are defined as those which are caused by the proposed action and are later in time or farther removed in distance but are still reasonably foreseeable (40 CFR 1508.8[b]).
- Cumulative Impacts – Cumulative impacts are defined as the incremental effect on the environment which is the result from the impacts of the proposed action along with other past, present, and foreseeable future actions, regardless of what agency or person undertakes the other actions (40 CFR 1508.7).

The FAA uses thresholds, found in Order 1050.1F Exhibit 4-1, that serve as specific indicators of significant impact for some environmental impact categories. FAA proposed actions that would result in impacts at or above these thresholds require the preparation of an EIS, unless impacts can be reduced below threshold levels. Quantitative significance thresholds do not exist for all impact categories; however, consistent with the CEQ Regulations, the FAA has identified factors that should be considered in evaluating the context and intensity of potential environmental impacts.

If these factors exist, there is not necessarily a significant impact. Some impact categories may have both a significance threshold and significance factors to consider. In these instances, a conclusion of significance can be determined based on the factors to consider even if the impacts do not meet the significance threshold criteria. As necessary, and appropriate, mitigation/avoidance measures and considerations are identified to reduce or eliminate anticipated environmental impacts for each of the alternatives.

Consistent with 706.f of FAA Order 5050.4, the following resources are not located in the Project area and would not be impacted by the Project alternatives: wild and scenic rivers, floodplains, farmland of statewide importance, geology, and topography. Accordingly, these environmental categories are not analyzed further in this section.

6.1 Water Resources (MEPA/NEPA)

Construction of new, or reconstruction of, airport facilities may temporarily or permanently affect surface waters, groundwater, or drinking water supplies. As a result, this document evaluates the proposed project's potential water quality impacts. Development projects have the potential to cause water quality impacts, including new buildings or expanding the terminal or hangars, building new aprons or ramps, new or extended runways and taxiways, and installing navigational aids (NAVAIDS).

6.1.1 No-Build Alternative

There would be no effects on water resources, including stormwater, under the No-Build Alternative. The Project areas would remain in active airport use, there would be no new construction, the amount of impervious area would not increase, and the airport's existing stormwater collection and treatment systems would not be improved. Therefore, no direct or indirect impacts are anticipated under the No-Build Alternative. The No-Build Alternative would not provide the added benefit resulting from upgrades to stormwater treatment proposed with the Preferred Alternative.

6.1.2 Preferred Alternative

6.1.2.1 Stormwater Management

As runway and taxiway projects are designed, compliance with the Massachusetts Stormwater Standards (SMS) will be met and will serve to enhance management over existing conditions. A detailed Stormwater Management Report will be developed for future permitting and final design of the airport improvements under a follow-on project. The proposed stormwater design will treat stormwater using a combination of BMPs. As part of this EA/EIR an analysis was conducted of high-level drainage concepts and potential methods of treating stormwater runoff that will be generated from new taxiway and runway pavements. This includes high level analysis of drainage concepts. Specific drainage designs, calculations, and plans for the purposes of permitting will be developed under later stages of the project (e.g., permitting phases).

The future stormwater management options to address land alteration and increased impervious surfaces, added by the project, will address potential flooding, increased impervious areas, and will identify measures to protect the water quality of the sole source aquifer including infiltration chambers and/or leaching basins with pre-treatment of runoff prior to discharge into the infiltration systems.

Portions of the existing drainage system predate the Standards and do not meet contemporary goals for stormwater management systems. Projects that will affect existing drainage systems will upgrade those systems to bring them into full compliance. Compliance with these Standards will protect the downstream receiving wetlands and water courses. In particular, Standard 5 which relates to discharges from areas designated as Land Uses with Higher Potential Pollutant Loads (LUHPPL) such as hangar ramps and apron areas will be met fully. Additionally, Standard 6, which identifies areas within Wellhead Protection Areas as a Critical Area under the Standards will also be met fully. These measures not only improve the quality of the runoff entering receiving waters but the quantity as well. Interim and post-development peak discharge rates will not exceed pre-development peak discharge rates for the 2-year, 10-year, 100-year storm events to the maximum extent practicable.

Portions of the Project site is considered a “redevelopment of a previously developed site” as defined in the Massachusetts Wetlands Act Protection Regulations (310 CMR 10.00). These portions include all existing paved areas or areas with buildings. The requirement of the Massachusetts Stormwater Standards for a redevelopment Project is that *“A redevelopment Project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment Project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.”*

Because this is an airport setting, certain Best Management Practices (BMPs) are not allowed. Per Advisory Circular (AC) No. 1501.5200-33 *"Hazardous Wildlife Attractants on and Near Airports"* new stormwater management practices that feature a permanent pool of water (i.e., wet ponds and constructed wetlands) are prohibited and underground facilities are encouraged. FAA's siting criteria for potential wildlife attractants state that wildlife attractants should not be within 10,000 feet of an airport's aircraft movement areas (including loading ramps and parking areas) or within *5* miles of approach or departure airspace. When BMPs are designed to temporarily pond water on the surface, this guidance requires that they drain within 24 hours following a 1- or 2-year storm event and within 48 hours following a 10-year storm event.

Proposed stormwater management infrastructure maintenance requirements and locations will be incorporated into the existing MSGP SWPPP when constructed. All applicable infiltration BMPs will obtain Underground Injection Control (UIC) Registration from MassDEP.

The stormwater systems will be designed to address future climate conditions utilizing MA Resilience Design Tool. The stormwater report will identify how the systems may accommodate the recommended 2070 100-Year 24-hour rainfall volume of eleven (11) inches as well as the 2050 recommendation for runway and taxiway projects corresponding to the 2050 10-Year 24-hour rainfall volume of 6.1 inches. The stormwater management systems will be designed to attenuate peak flows and meet pollutant loading requirements based on future climate conditions in 2050 and 2070. Copies of the final Stormwater Management Report will be provided to MassDEP and CCC as necessary during the permitting phase.

Runway 15-33 Extension

Under the Proposed Action, the existing Runway 15 end safety areas will be constructed to current FAA standards. The proposed new pavement will be approximately 141,500 sf runway and 73,500 sf taxiway pavements for a total of 215,000 sf (4.9 acres). The existing drainage system will be relocated to the edge of the safety area and upsized to accept stormwater from the runway extension. The airport's existing Vortech[1] unit can be relocated to the west side of the perimeter road and a new outlet pipe could connect to the existing 36-Inch pipe that connects to existing Outlet A at Upper Gate Pond. Leaching catch basins can be installed up stream of the existing Vortech unit and sized to maintain existing flows into the pond.

Table 6.1-1 Runway 15 Pavement and Turf Impacts

Proposed Airfield Work	Pavement		Turf		Total Combined Area	
	Area (sf)	Area (Acres)	Area (sf)	Area (Acres)	Area (sf)	Acres
Extend RW 15 end 895 feet	141,500	3.25	1,856,800	42.63	1,998,300	45.87

New Taxiway B

Existing Taxiway B will be relocated to be within 400 ft of the Runway 6-24 centerline. Taxiway B will also be extended approximately 750 ft toward the RW 24 End and will include removal of a portion of existing Taxiway B and Stub Taxiway D pavements. Total length will be approximately 4,000 ft. The net increase in pavement area will be approximately 226,200 sf (5.19 Acres).

[1] Vortech is a below-ground, engineered stormwater treatment device that combines swirl concentration and flow controls into a single treatment unit. Vortech is used for capturing and retaining trash, debris, sediment, and hydrocarbons from stormwater runoff. The system's large swirl concentrator and flow controls work together to create a low energy environment, capable of capturing and retaining particles down to 50 microns.

Importantly, the construction of the relocated Taxiway B will be designed to avoid increasing stormwater runoff rates to Lewis Pond located north of Taxiway C. This can be accomplished by a combination of new grading, adjusting existing leaching basins to continue functioning as designed and incorporating new leaching basins and/or new chamber systems to account for the increased paved area.

Table 6.1-2 Taxiway B: Pavement and Ground Impacts

	Pavement		Turf		Total	
	Area (sf)	Area (Acres)	Area (sf)	Area (Acres)	(sf)	(Acres)
Taxiway 'B'	330,200	7.58	532,100	12.22	862,300	19.80
Taxiway 'B' Pavement Removal	(104,00)	(2.39)	214,300	4.92	110,300	2.53

The new taxiway will impact two existing storm drains that run perpendicular to the new taxiway and approximately seven (7) existing catch basins located between Taxiway B and Runway 6-24 (see **Figure 5.4-2**). It is anticipated that these catch basins will be removed and/or relocated. Runoff from the new pavement can be collected in drainage swales located outside the taxiway safety area (59 ft either side of centerline) and infiltrated into the ground via leaching basins. Each infiltration device will have pretreatment to remove a minimum 44% TSS prior to discharge into each infiltration device, which will provide additional TSS removal.

New Parallel Taxiway D

A new parallel Taxiway D parallel to Runway 15-33 is proposed (approximately 3,700 ft) and will include removal of Taxiway E including the existing run-up pit and removal of existing portions of existing Taxiway D. The net increase in pavement area will be approximately 164,700 sf (3.781 Acres).

Table 6.1-3 Taxiway D Land Impervious /Turf Impacts

	Pavement		Turf		Total Combined Area	
	Area (sf)	Area (Acres)	Area (sf)	Area (Acres)	(sf)	(Acres)
Taxiway 'D' (2:1 slope)	315,000	7.23	555,300	12..75	870,300	119.98

Stormwater runoff from the new Taxiway D would flow toward the infield areas between the proposed taxiway and Runway 15-33. Stormwater will be discharged into new leaching catch basins, with pretreatment of stormwater designed to provide a minimum fifty (50) foot vegetated grassed filter strips prior to discharge into leaching catch basins. Pretreatment for stormwater is required because the airport is within Zone II of the Wellhead Protection Zone.

Much of Taxiway D will require fill between existing Taxiway A1 and existing Taxiway D. The preferred alternative includes either an engineered slope or a retaining wall along the outside edge of the taxiway safety area (i.e., east side) will be constructed within the Upper Gate Pond to minimize impacts to the pond. A vegetated earthen berm will be constructed along the top of the slope to prevent sheet flow from entering the slope and potentially causing erosion.

Under proposed conditions runoff from both sides of new Taxiway D can be discharged into new leaching catch basins within the infield areas. Pretreatment will be provided prior discharging into each of the new leaching catch basins. Under the Preferred Alternative, proposed conditions for new Taxiway D will impact the existing Vortech Unit A that discharges at Outfall A to Upper Gate Pond. The existing Vortech unit will be relocated due to the construction of the new taxiway. The exact location of this Vortech unit will be determined under a future design/construction project and, if necessary, it can be relocated outside of the taxiway safety area. This unit will not receive any additional runoff from the new taxiway pavement. Increase runoff over existing conditions can be controlled by the installation of additional leaching catch basins. These types of systems are currently in use throughout the airport. The exact size, dimensions and location of these systems will be determined under a future design/construction project.

6.1.2.1.1 Wellhead Protection Zone

Portions of the proposed work will take place within the Town of Barnstable wellhead protection district. Proposed infiltration within the Wellhead Protection Zone will require pretreatment of runoff entering any infiltration device such as vegetative strips or leaching basins. The existing infiltration devices (chamber systems and leaching catch basins) may require the addition of pretreatment devices to satisfy the wellhead overlay district drainage requirements. These would be designed under the permitting phase for this project and installed at the time of construction.

The new taxiway will impact two existing storm drains that run perpendicular to the new taxiway and approximately seven (7) existing catch basins located between Taxiway B and Runway 6-24. It is anticipated that these catch basins will be removed and/or relocated. Runoff from the new pavement can be collected in drainage swales located outside the taxiway safety area (59 feet either side of centerline) and infiltrated into the ground via leaching basins. Each infiltration device will have pretreatment to remove a minimum 44% TSS prior to discharge into each infiltration device, which will provide additional TSS removal.

6.1.2.1.2 Compliance with MassDEP Stormwater Management Standards

The following information lists the standards that must be met to satisfy MassDEP requirements and considers potential BMPs that may be utilized to comply with each standard.

STANDARD 1 – No untreated discharges or erosion to wetlands. Applicants must demonstrate that there are no new untreated discharges. To demonstrate that all new discharges are adequately treated, applicants may rely on the computations required to demonstrate compliance with Standards 4 through 6. No additional computations are required.

The future stormwater management report will identify measures that will be employed to protect the water quality of the sole source aquifer such as vegetative strips, water quality devices, leaching catch basins or infiltration chambers. These devices will remove 80% of total suspended solids as required by DEP.

- **Runway 15-33**: There are no wetlands proximate to the location of the runway extension, thus there will be no discharge of untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. Rather, this project will utilize leaching catch basins or underground infiltration chambers to infiltrate any increase in runoff due to increased impervious areas directly into the ground after treatment. Leaching basins and infiltration chambers have been extensively utilized throughout the airport on previous projects.
- **Taxiway B**: There are no wetlands proximate to the location of the Taxiway B project, therefore the Taxiway B project will not discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. Rather, the Proposed Action will have the opportunity to utilize leaching basins to dispose of runoff. Leaching basins and infiltration chambers are commonly used throughout the airport.
- **Taxiway D**: The Taxiway D project will not discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. Rather, this project will utilize leaching basins to infiltrate runoff. Leaching basins are commonly used throughout the airport.

STANDARD 2 - Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.

The future design of the stormwater management report will utilize revised rainfall intensities by NOAA Atlas 14, Point Precipitation Frequency Estimates including for future climate conditions. Methods available to manage increase post development runoff include infiltration devices such as leaching basins and/or underground chamber systems or below ground detention basins. Pretreatment devices will need to be provided at each proposed leaching system to remove a minimum 44% TSS prior to discharging runoff into these systems to satisfy the Town's standards for work within the wellhead protection overlay district. The stormwater management report will also assess flooding risks to properties immediately adjacent to proposed projects associated with the Airport Master Plan Update.

Standard 3 – Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices and good operation and maintenance. At a minimum, the annual recharge from the post development site shall approximate the annual recharge from the pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

There will be no loss of annual recharge to groundwater due to new taxiway pavement because future design will include using leaching basins and infiltration chambers. The stormwater management report will identify new pavement/impervious areas and pavement removal for each of the proposed projects in the Airport Master Plan Update. New impervious areas will be minimized to the maximum extent practicable while adhering to FAA guidelines. All infiltration systems require registration under the MassDEP Underground Injection Control (UIC) program.

Standard 4 - Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when (a) Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan and thereafter are implemented and maintained; (b) Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with Massachusetts Stormwater Handbook; and (c) Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

TSS removal can be accomplished by a long vegetative strip (> 50 ft) within the side runway safety area prior to discharge into leaching catch basins. Proprietary treatment units are also available for use to remove 80% TSS. A minimum of 44% TSS removal is required prior to discharge into a leaching basin because the airport is in a wellhead protection zone. These types of devices are currently in use throughout the airport.

Standard 5 – Stormwater discharges from areas with higher potential pollutant loads require the use of specific stormwater management BMPs. The use of infiltration practices without pretreatment is prohibited.

This project is not considered an area of high potential pollutant loads. Pretreatment devices are required at each infiltration device within the wellhead overlay district and will be utilized for each of the proposed projects.

Standard 6 - Stormwater discharges to critical areas must utilize certain stormwater BMPs approved for critical areas. Critical areas are Outstanding Resource Waters (ORWs), shellfish beds, swimming beaches, cold water fisheries, and recharge areas for public water supplies.

This project will be subject to Standard 6 because it is within Zone II Wellhead Protection for Cape Cod. The proposed drainage design for this project will utilize water treatment units to remove 80% TSS prior to discharge into infiltration chambers and/or leaching basins to provide the required pretreatment of stormwater runoff.

Standard 7 - A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5 and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

The runway extensions and new taxiways will be considered new development. Therefore Standard 7 does not apply.

Standard 8 - A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

Design during the future phases of the project will identify specific construction period activities (such as dewatering activities), as part of the anticipated permitting.

Standard 9: A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

Cape Cod Gateway Airport has an existing Stormwater Pollution Prevention Plan (SWPPP) under the National Pollution Discharge Elimination System (NPDES) 2021 Multi-Sector General Permit (MSGP) in place for all airport facilities including all existing drainage facilities (see prior discussion in Section 5.4.1.1 and **Appendix L**). The SWPPP is on file at the Airport and a project specific operation and maintenance plan will be prepared for the final design of this project and incorporated into the SWPPP.

Standard 10: All illicit discharges to the stormwater management system are prohibited.

All known non-allowable non-stormwater discharges have previously been eliminated through the closure of hangar floor drains connected to leaching basins and the implementation of a zero-discharge policy. A new Illicit Discharge Compliance Statement will be prepared for the final design of this project.

6.1.2.2 Surface Waters and Wetlands

The environmental consequences of the Preferred Alternative include unavoidable wetland resource area impacts associated with the permanent fill from the relocation of Taxiway D and associated grading on Upper Gate Pond. No other projects will impact wetland resource areas. As identified in Section 5.4, these resource areas are likely only jurisdictional under local, and statutes and implementing regulations due to the recent revised definitions of Waters of the US.

Due to site constraints, and FAA design requirements for airport geometry, this Project activity cannot be designed to fully avoid impacts to Bordering Vegetated Wetlands (BVW). Permanent fill of approximately 4,500 sf of BVW, 13,700 sf Land Under Water (LUW), 300 linear feet of Inland Bank will occur as a result of the realignment of Taxiway D. These impacts have been avoided and minimized to the maximum extent practicable through utilization of 2:1 side slope design with an engineered slope option.

Additionally, approximately 3.8 acres of vegetated upland areas within 200 feet of Upper Gate Pond, a buffer zone protected by the CCC Regional Policy Plan Objective[2] and prior Minor Modifications to DRI Decisions[3] will be impacted.

Although final design and means and methods of construction have not yet been determined, there is also the potential for up to 5,200 cubic yards of excavation (dredge) of unconsolidated organic materials (i.e., "muck") along the pond bottom in order to provide suitable base material for the taxiway slope. As part of the next phase of design, geotechnical engineers will further investigate this area to ascertain if excavation is recommended or if there are other options to adequately support the slope and meet FAA design criteria.

These permanent impacts are summarized in **Table 6.1-4** below and depicted in **Figure 6.2-1**. In addition to the proposed permanent impacts to BVW, temporary impacts of 1,500 sf of BVW generally involve a 5-foot horizontal area necessary for construction access and work associated with the Taxiway D. The proposed construction would temporarily alter these areas by a variety of construction activities including temporary excavation and backfilling, support of excavation and water control, staging and operating construction equipment, grading, and installing erosion controls. Once construction is complete, the resource areas not permanently impacted by filling would be restored to pre-existing grades and seeded with a native wetland seed mix.

Table 6.1-4 Taxiway D Impacts to Upper Gate Pond

	BVW Impact		Bank Impact	Land Under Water Impact		200-foot Buffer Zone
	Area (sf)	Area (Acres)	Linear Feet (LF)	Area (Acres)	Area (sf)	Area (Acres)
Permanent	4,600	0.11	300	0.29	12,700	3.78

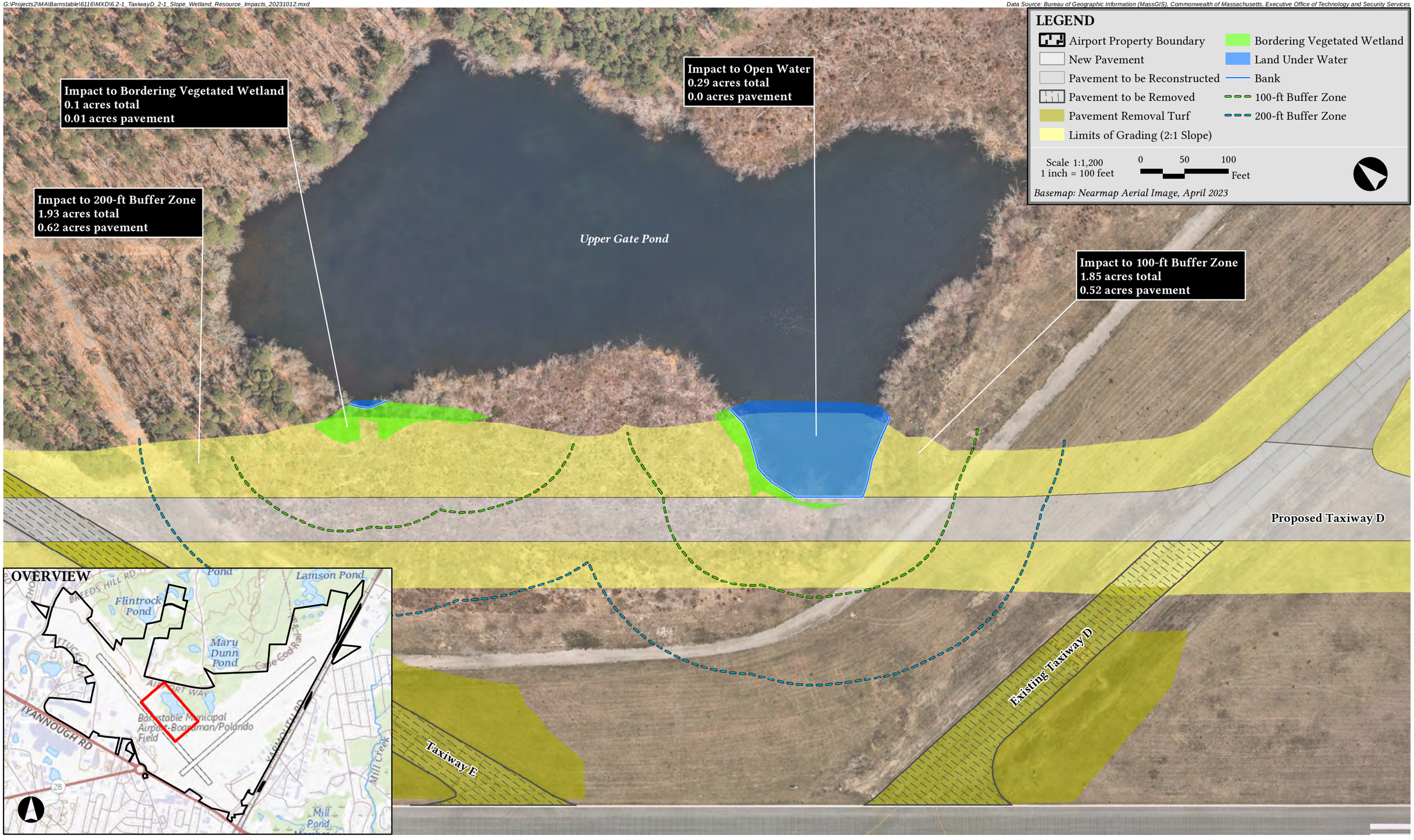
Compliance with specific performance standards of the applicable regulations identified below is addressed in Chapter 8.0 for each of the applicable resource areas. Permits under local and state regulations will be required for these impacts: Massachusetts General Laws c. 21, §§ 26-53, and the MassDEP's Water Quality Certification Regulations at 314 CMR 9.00 (Water Quality Certification Regulations).

[2] Objective WET 1: Protect wetlands and their buffers from vegetation and grade changes.

[3] See Minor Modification to Decision CCC Project No. TR95006 issued on March 25, 2015.

G:\Projects2\MA\Barnstable\6116\MXD\6.2-1_TaxiwayD_2-1_Slope_Wetland_Resource_Impacts_20231012.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Cape Cod Gateway Airport **Barnstable, Massachusetts**

Figure 6.2-1
Taxiway D Impacts to Upper Gate Pond

6.1.3 Indirect Impacts

The proposed Project is not anticipated to result in indirect or secondary impacts that would adversely affect water resources. Indirect or secondary impacts from stormwater runoff to water resources are prevented through the Airport's Spill Prevention, Control, and Countermeasure (SPCC) Plan and regular maintenance of management facilities. Potential indirect impacts from historical use of PFAS containing firefighting foam includes the following measures: the Town of Barnstable through the Hyannis Water System will continue to operate the Maher Wells treatment plant and will continue to provide drinking water that meets the regulatory drinking water standards. The MassDEP periodically inspects the Maher Treatment plant under the water supply/drinking water program.

Groundwater monitoring by the Airport will continue to track the PFAS plume migration and document the reduction in concentration over time until regulatory closure is achievable (estimated to be completed by 2029). A majority of the PFAS impacted soil within the two effected areas have been capped to reduce infiltration and groundwater impacts. The caps are inspected bi-annually to verify their effectiveness.

The actual time for treatment will be based on the collection of analytical samples for laboratory analysis. Groundwater monitoring beyond 2029 may be conducted at the Airport as part of an annual activity and use limitation (AUL) inspection or if plume concentrations have not dropped below the applicable GW-1. Bi-annual reports will continue to be uploaded to MassDEP until a permanent solution can be obtained.

6.1.4 Construction Impacts

6.1.4.1 Stormwater

For Projects identified herein with land disturbance of greater than 1 acre, the Airport and selected contractor will need to seek coverage under the 2022 (or its replacement) EPA NPDES Construction General Permit (CGP), including developing a stormwater pollution prevention plan (SWPPP), that reduces pollution from erosion and sedimentation from construction activities. The Airport or its designee will regularly inspect the active construction sites for compliance with the SWPPP and make sure that appropriate erosion control measures are in place and working properly.

In addition, construction will be phased out so that disturbed areas are minimized to the extent feasible. The SWPPP and selected BMPs will be finalized as construction methods and schedule are determined by the selected contractor. The SWPPP will be finalized prior to construction, updated as necessary during construction, and maintained throughout the period of construction. In addition, construction activities will comply with the FAA Advisory Circular 150/5370-10H (Latest Version), Airport Construction Standards. Site plans included in the SWPPP will depict sedimentation and erosion control measures and EPA and MassDEP BMPs to control and reduce sediments and dust in stormwater discharges to the extent feasible, in accordance with NPDES requirements.

A project specific operation and maintenance plan will be prepared for the final design of this project and incorporated into the SWPPP.

6.1.4.2 Wastewater Management

With the recent addition of a sewer line along Mary Dunn Way, any new proposed facilities will be able to connect to the Town wastewater system. Existing facilities are required to connect to the new sewer line. Typically, general aviation hangars are not anticipated to result in additional wastewater discharges as these hangars are used for aircraft storage only.

6.1.5 Mitigation Measures

6.1.5.1 Wetland Replication

Mitigation for the Preferred Alternative's unavoidable impacts to BVW will be provided in accordance with local and state wetlands regulations and performance standards. For permanent impacts resulting from filling BVW, the altered BVW would be replaced (replicated) in-kind proximate (to the extent feasible) to the water body or reach of the waterway area lost to meet mitigation requirements under the Barnstable Wetlands Protection Bylaw, Cape Cod Commission Water Resources Policy, and MassDEP Water Quality Certificate regulations (see 314 CMR 9.06) and the WPA (see 310 CMR 10.55(4)(b)). The proposed ratio of replacement area to BVW loss is at least 1:1, and a total of 4,600 sf of BVW replication would be provided on Airport property proximate to the impact location(s). The wetland replication area would be designed and constructed as per MassDEP's *Massachusetts Inland Wetland Replication Guidelines, Second Edition* (September 2022).

A desktop analysis of potential wetland replication sites on the Airport has been initiated. A preliminary constraints assessment associated with locating the replication site on Airport includes the following:

- On-site wetland mitigation must be designed with adherence to FAA's Advisory Circular regarding wildlife hazard mitigation at airports (AC 150/5200-33B) recommendation that wetlands mitigation be sited a minimum of 10,000 feet from the active runway. It also should be designed in such a manner as to inhibit the use of wildlife proximate to the taxiways and runways as it is currently managed throughout the Airport.
- Steep topography adjacent to wetland impact area at Upper Gate Pond.
- Limited wetland areas on airport property adjacent to which one could construct a wetland.
- Lack of opportunity for wetland restoration through removal of fill on airport property.
- Mapped rare species habitat and vernal pools associated with other ponds located on airport property.

Potential off-airport properties for the development of a wetland replication or restoration area within the Airport vicinity in the Town of Barnstable will be identified in consultation with the Barnstable Conservation Commission, Barnstable Department of Natural Resources, Barnstable Land Trust, Cape Cod Commission, Massachusetts Division of Ecological Restoration (DER), MA Division of Fisheries and Wildlife (DFW), and Mass Audubon. These properties will undergo a screening process to determine suitability for either wetland replication or land preservation to meet regulatory requirements. These areas will be evaluated in terms of their location within the watershed, proximity to impact area, potential for adequate replication area, potential for replication success and maintenance, potential to recreate lost functions and values, presence of invasive species, site access, cost of acquisition, and other factors. This screening process will also include site visits, if feasible.

Once potential sites are identified and site visits are complete, a conceptual replication plan will be presented to the regulatory agencies as part of the permitting phase. Once consensus is reached on a permittable plan, a draft wetland replication site plan will be developed, and accompanying narrative will be completed. The wetland replication plan, to the extent compatible with the airport's safety needs, will also incorporate important wildlife habitat features into the design including burrowable soils for small mammals, flowering herbs for pollinator species, and dense herbaceous cover, designed to replicate those functions of the impacted wetlands.

6.1.5.2 Stormwater

Stormwater Pollution Prevention Plan (SWPPP) would be generated for construction-related activities. During construction, structural and non-structural controls to minimize erosion and sedimentation, including temporary stabilization, temporary seeding, permanent seeding, dust control, temporary sediment basins and check dams, diversion swales, catch basin inlet protection, and dewatering filters.

During operation, consistency with MassDEP's Stormwater Regulations through measures including infiltration, peak runoff rate and volume control, and total suspended solids removal will be implemented. Any updates to the Airport's MSGP SWPPP will be implemented.

6.1.6 Impact Summary

The FAA uses the following significance thresholds for wetlands and surface waters to determine if the action would:

1. Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;
2. Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected;
3. Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety, or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public);

4. Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands;
5. Promote development of secondary activities or services that would cause the circumstances listed above to occur; or
6. Be inconsistent with applicable state wetland strategies.

Wetland impacts as described above in **Table 6.1-4** Taxiway D Impacts to Upper Gate Pond include permanent fill of approximately 4,500 sf of BVW, 13,700 sf Land Under Water (LUW), 300 linear feet of Inland Bank will occur as a result of the realignment of Taxiway D – which has been minimized to the greatest extent feasible by the selection of a 2:1 slope over the FAA standard 4:1 slope for taxiway side areas. As described in Section 6.1.5., mitigation will be designed in the subsequent permitting phases of the project to meet all local, state, and federal wetlands regulations and performance standards, as applicable.

Permanent impacts resulting from filling BVW, the altered BVW would be replaced (replicated) in-kind proximate to the water body or reach of the waterway area lost to meet mitigation requirements under the Barnstable Wetlands Protection Bylaw, Cape Cod Commission Water Resources Policy, and MassDEP Water Quality Certificate regulations (see 314 CMR 9.06) and the WPA (see 310 CMR 10.55(4)(b)). The proposed ratio of replacement area to BVW loss is at least 1:1, and a total of 4,600 sf of BVW replication would be provided on Airport property proximate to the impact location(s). Mitigation measures described above will be used to reduce potentially significant adverse impacts below the level of significance.

Based on the proposed avoidance, minimization, and mitigation, in Section 6.1.5., there are no significant impacts on wetlands and surface water beyond the existing condition as a result of the Proposed Action.

6.2 Coastal Resources (MEPA/NEPA)

The MA Office of Coastal Zone Management is being provided an opportunity to comment on this document relative to the consistency of the project with Massachusetts Coastal Policies. Specifically, the project will be reviewed to ensure that it conforms with policies for water quality, habitat, protected areas, coastal hazards, port and harbor infrastructure, public access, energy, and ocean resources, which are embodied in relevant state regulations. A discussion on each coastal policy and discussion relative to the proposed projects provided in Section 8.3.7 determined that the proposed project will be consistent to the maximum extent practicable with the enforceable policies of the *Massachusetts Office of Coastal Zone Management Policy Guide*. Section 8.3.7 contains a discussion on each coastal policy and discussion relative to the proposed projects. Furthermore, the Projects are not located near any coastal landforms (e.g., dunes, beaches, salt marshes).and would not pose an impact to human safety, property or cause adverse impacts to the coastal environment. Based on this information, there are no significant impacts on coastal resources beyond the existing condition as a result of the Proposed Action based on the Preferred Alternative Projects.

6.3 Air Quality (MEPA/NEPA)

6.3.1 No-Build Alternative

The No-Build Alternative assumes that the Projects would not be implemented; therefore, there would be no impacts on air quality.

6.3.2 Proposed Action

The Airport is located in a NAAQS attainment area; is not in an Indirect Source Review designated area of Massachusetts; and is not located in an area with State Implementation Plan requirements. Therefore, no formal Emissions Dispersion and Modeling System or other air quality modeling is required. Instead, a qualitative analysis examining the background pollutant levels (see Table 5.6-3), which are well within applicable air quality standards, and potential for changes and/or increases in air emissions was completed. The Project is not anticipated to result in additional emissions from any changes in operation due to several factors. This includes a near-term shift in commercial aircraft to a more fuel-efficient model which provides over 10% improvement in fuel and carbon emissions[4] .Temporary emissions associated with construction are anticipated from the Project and will be mitigated to the extent possible as discussed below. Some additional emissions may result from increased vehicle traffic as discussed in Section 6.8. However, this additional traffic will not result in emissions sufficient to result in an exceedance of the NAAQS.

Furthermore, the Proposed Actions are anticipated to have little effect on air traffic volume over the next 5-7 years as shown in Table 1.4-3, showing a modest increase of 1,000 operations by 2030, and will have minor effects on air traffic patterns, and therefore are not expected to have an adverse effect on air quality. Mitigation for permanent impacts to air quality is not proposed.

6.3.3 Construction Impacts

The construction phases of each proposed action are expected to temporarily increase air emissions from both fugitive dust generated from earth moving activities and the exhaust of non-road construction equipment. Emissions from the operation of construction machinery (i.e., carbon monoxide [CO], nitrogen oxide [NOx], particulate matter [PM10, PM2.5], volatile organic compounds [VOCs], and GHG emissions) are short-term and not generally considered substantial. Temporary air quality impacts during construction periods will be mitigated as described in the Mitigation section below under “Temporary Impacts.”

6.3.4 Mitigation Measures

Several strictly enforced measures would be used by contractors to reduce potential emissions and minimize impacts including:

- Using wetting agents on areas of exposed soil on a scheduled basis;

[4] Need reference here.

- Using covered trucks;
- Monitoring actual construction practices to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized;
- Minimizing storage of debris on the site;
- Periodic street and sidewalk cleaning with water to minimize dust accumulations; and
- The contractor would comply with the National Emission Standards for Hazardous Pollutants (NESHAP) throughout demolition and construction activities.

In addition to measures to control earth material particulate dust, the contractor would also strive to minimize diesel emissions during construction. Emissions from the operation of construction machinery (i.e., carbon monoxide [CO], nitrogen oxide [NOx], particulate matter [PM10, PM2.5], volatile organic compounds [VOCs], and GHG emissions) are short-term and not generally considered substantial. Specific measures to be taken to reduce diesel emissions and other construction related air quality impacts include the following measures:

- Using equipment retrofitted with diesel emissions control devices. The Proponent would specify during the procurement of the subcontractors, that the majority of the heavy equipment operating on the site be retrofitted with diesel emissions control devices;
- Maintaining an "idle free" work zone of fossil fuel trucks and equipment by providing supplemental hoisting and pumping equipment along with "just-in-time" delivery methods. On-site idling would be limited to five minutes. "Do Not Idle" signs would be posted at appropriate locations;
- By locating combustion engines away from sensitive receptors such as fresh air intakes, air conditioners and windows; and
- Using Ultra Low Sulfur Diesel for all trucks and construction machinery as required by the US EPA.

6.3.5 Impact Summary

As described in Section 5.6, the FAA has established significance thresholds to serve as indicators of what constitutes a significant impact. For air quality, the significance threshold is any action that would result in criteria air pollutant concentrations that would lead to an exceedance of the NAAQS or increase the severity of any existing exceedance. Based on this information, there are no significant impacts on the air quality (neither onsite within project area nor vicinity/regional) beyond the existing condition as a result of the Proposed Action.

6.4 Climate and Greenhouse Gas Emissions (MEPA/NEPA)

Greenhouse gas (GHG) emissions contribute to climate change. Carbon dioxide (CO2) is the primary greenhouse gas emitted through human activities. In 2020, CO2 accounted for about 79% of all U.S. greenhouse gas emissions from human activities. Carbon dioxide is naturally present in the atmosphere as part of the Earth's carbon cycle (the natural circulation of carbon among the atmosphere, oceans, soil, plants, and animals).

The carbon cycle exists between carbon dioxide entering the atmosphere through fuels sources (coal, natural gas, and oil), solid waste, trees, and other biological materials. Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle. Sequestration occurs in forests and soils primarily through photosynthesis. Carbon dioxide in the atmosphere is incorporated as fixed carbon into the roots, trunk, branches, and leaves of trees, with roughly 50 percent of tree carbon storage occurring in the woody biomass (EPA 2007).[5]

Carbon sequestration occurs in four parts of a forest: soil, trees, the forest floor, and understory vegetation. The share of total sequestration attributable to each part differs greatly depending on the region, the type and age of the forest, the quality of the site, and previous land use. On average, soil contains 59 percent of the carbon stored in a forest, trees contain 31 percent, forest litter holds 9 percent, and understory vegetation accounts for 1 percent.[6]

Sources of greenhouse gas emissions at the Airport include existing buildings, vehicles, and aircraft. The project does not result in permanent sources of GHG emissions as future terminal building enhancements are anticipated to be 100% electrically powered by the Airport's microgrid project underway (currently in planning phases as of September 2023). While electric power is not carbon neutral, with Massachusetts electrical sector resulting in 8,388 MT of CO2 in 2021[7], the Airport's future microgrid will utilize both battery storage and renewable energy sources (airport solar array) to effectively result in neutral carbon emission or negative emissions. Being carbon negative requires a facility or building to remove more CO2 from the atmosphere than it emits.

An increase in aircraft activity is not anticipated as a result of the proposed Projects, rather, the Projects are to enhance the safety of aircraft flying into and out of the airport and to comply with FAA standards for airfield geometry. Aircraft operations are anticipated to maintain their existing levels and future growth is forecasted by models in the master plan. Information regarding the potential for air quality impacts is provided in Section 6.3.2 above. As noted above, the Projects are

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5 U.S Environmental Protection Agency. 2007. Carbon Sequestration in Agriculture and Forestry: Basic Information

6 Birdsey, Richard A. 1992. Carbon Storage and Accumulation in United States Forest Ecosystems, General Technical Report W0-59 (Department of Agriculture, Forest Service, August 1992).

7 U.S. Energy Information Administration, Form EIA-860, *Annual Electric Generator Report*, U.S. Energy Information Administration, Form EIA-861, *Annual Electric Power Industry Report,* U.S. Energy Information administration, Form EIA-923, *Power Plant Operations Report* and predecessor forms, accessed from https://www.eia.gov/electricity/state/massachusetts/

proposed primarily to safely accommodate current operations. A temporary increase in emissions is anticipated as part of the construction period. Measures will be adopted to minimize impacts from temporary emissions as described in Section 6.3.4 above.

The Airport is committed to curbing GHG emissions long-term through various strategies including improving the energy efficiency of buildings on-site, evaluating the installation of solar canopies at the Airport parking lot, limiting idling by aircrafts, upgrading airport maintenance vehicles/requiring low sulfur diesel fuel use by contractors, and carrying out regular energy audits on on-site buildings. A discussion of GHG emissions associated with proposed tree removal resulting from Taxiway D, hangar development (East Ramp), and future potential off-airport obstruction removal is discussed in Section 6.4.1.4. below.

6.4.1 Greenhouse Gas Analysis (MEPA)

The Proponent is taking strong, practical steps to reduce carbon emissions while balancing its development goals to create a successful Project. In keeping with the Airport's carbon reduction goals, the Project is being designed to minimize energy use to the maximum extent practicable, and with an understanding of the need to reduce greenhouse gas (GHG) emissions.

This Section presents a GHG analysis that complies with the MEPA Greenhouse Gas Emissions Policy and Protocol ("GHG Policy") of May 2010. In addition, the Proponent has evaluated the impacts of land clearing alterations required for two discrete projects, Taxiway D and East Ramp expansion.

6.4.1.1 Introduction and Project Overview

The GHG Policy requires, for certain projects undergoing review by the MEPA Office and required to prepare an EIR, that GHG emissions be quantified and that measures to avoid, minimize, or mitigate such emissions be identified. The GHG Policy requires proponents to quantify the impact of proposed mitigation in terms of energy savings and GHG emissions.

In this case, the Projects evaluated herein include the future expansion of the airport terminal building which MEPA has identified as requiring a GHG analysis. The airport does not plan to build any expansions or additions for at least five years, if at all. The potential expansion will happen as passenger demand necessitates. Because of this, there are no architectural plans or designs to model for energy use at this time. In lieu of the preparation of a GHG model, the Proponent is committing to a series of GHG mitigation commitments as identified below.

6.4.1.2 GHG Analysis - Stationary Source Mitigation Commitments

The Airport is located in the Town of Barnstable. Barnstable is not a Stretch Code community. However, in order to support the Airport's decarbonization goals, the Proponent would be willing to commit to the 2023 Stretch Energy Code measures. In lieu of modeling, the Proponent is committing to a series of GHG mitigation commitments. For any new buildings, expansions, or additions, the Proponent will commit:

- High performing envelope that complies with the 2023 Stretch code envelope performance requirements;
- 100% heat pump space heating;
- Energy recovery ventilation per the 2023 Stretch code update;
- Electric domestic hot water heating, specific method to be determined. Heat pump domestic hot water heating to be analyzed;
- Roof to be constructed PV-ready;
- Installed electric vehicle (EV) charging spaces, quantity to be determined;
- EV infrastructure for additional future EV-parking spaces to be installed, quantity to be determined.

Should any future Energy Code Updates occur prior to the commencement of work, the Project will comply with future Energy Code Updates. Specific GHG reduction has not been quantified, as there are no actual plans in place to model. The Proponent's ongoing GHG Commitments have been detailed in Section 5.7. Upon completion of the potential future buildings, additions, or expansions, the Proponent will submit a self-certification to the MEPA Office, prepared in accordance with the GHG Policy. This certification will identify the GHG mitigation measures incorporated into the building and will illustrate the degree of GHG reduction achieved. Details of the Proponent's implementation of operational measures will also be included in this submittal.

6.4.1.3 GHG Analysis - Mobile Source Assessment

A mobile source emissions analysis was conducted to calculate the changes in CO2 emissions as a result of the proposed Projects and identifies options for potential reductions associated with improvements via TDM and other green initiatives at the Airport.

As specified in the MEPA Greenhouse Gas Emissions Policy and Protocol (May 5, 2010), an estimate of CO2 emissions from mobile sources was calculated based on existing and estimated new trips, approximate distances traveled, and GHG emissions factors for vehicle trips. Potential reductions in mobile source CO2 emissions may be achieved via transportation demand management measures (e.g., subsidized bus passes, biking incentives).

Direct emissions from transportation sources (e.g., fleet vehicles) are not included in this assessment because the Airport does not anticipate additional fleet vehicles as a result of the Proposed Action.

6.4.1.3.1 Baseline Indirect Emissions from Transportation

The baseline condition for indirect transportation emissions is calculated from existing daily trips to the airport (472 vehicle trips). The improvements proposed in the Preferred Alternative include a potential range of terminal building expansions. As a result of the Preferred Alternatives, the 100

peak hour passenger scenario for the terminal building, would generate approximately 236 net new daily vehicle trips. These net new daily trips are estimated to increase annual CO2 emissions by approximately +1,139 tons of CO2 per year.

The 150 peak hour passenger scenario for the terminal building would generate approximately 472 net new daily vehicle trips. These net new daily trips are estimated to increase annual CO2 emissions by approximately +2,279 tons of CO2 per year, as shown in Table 6-5.1.

Table 6.4-1 Mobile Source CO2 Emissions

	Daily Trips	Miles/Round Trip	VMT/Day	Annual VMT	Annual CO2 Emissions (tons/year)[8,9]	Increase in GHG over baseline
Existing (Baseline/No Build Condition)	472	30	14,160	5,168,400	2,279	
Vehicle Trips (Preferred Alternative -100 Peak Hour Passengers)	708	30	21,240	7,752,600	3,418	+1,139 tons/year
Vehicle Trips (Preferred Alternative -150 Peak Hour Passengers)	944	30	28,320	10,336,800	4,558	+2,279 tons/year

Mobile Source Related Improvements

The Airport has committed to investigate several Transportation Demand Management (TDM) strategies to reduce emissions from mobile sources. The Airport proposes to investigate the feasibility of providing airport employees (and tenant employees) with subsidized public transportation options (e.g., reduced CCCRTA bus passes) to reduce mobile source CO2 emissions. Additionally, the airport is committed to providing employee facilities (lockers and changing areas) to increase the number of employees traveling to the airport by walking or biking. In addition, to the above identified TDM strategies, the airport's future micro/smart grid infrastructure (currently in planning) will allow the Airport to achieve additional TDM strategies, not yet feasible, including adding EV vehicle and bus charging infrastructure utilizing onsite generated and stored renewable energy. The future micro grid is a key component to promoting trips to the airport using zero emissions vehicles. The Airport has committed to providing eight charging stations for electric vehicles.

[8] The average passenger vehicle emits approximately 400 grams of CO2 per mile. EPA, Office of Transportation and Air Quality. *Tailpipe Greenhouse Gas Emissions from a Typical Passenger Vehicle,* EPA-420-F-23-014 June 2023.

[9] 1 ton (t) is equal to 907184 grams (g)

6.4.1.4 GHG Analysis - Land Alterations/Tree Removal (MEPA)

The MEPA Certificate requests that the Airport provide an analysis of tree clearing related changes to carbon sequestration and storage with the Project site, along with opportunities to reduce, minimize and mitigate losses to these functions. Specifically, the MEPA Office requests that "*To the extent the degree of tree removal is substantial as determined in consultation with the MEPA Office, the DEIR should develop a methodology to develop the analysis, identify associated impacts on GHG emissions, and identify measures to avoid, minimize and mitigate impacts. The DEIR should provide a quantitative carbon analysis of tree clearing activities that should consider both the one-time direct emissions from tree cutting as well as loss of potential carbon sequestration over a certain time period (e.g., 30 or 40 years).*"

While the preferred alternatives proposed herein results in less than 50 acres of land alteration (not counting previously disturbed turf to be regarded and remain as turf), tree removal is proposed on approximately 8.65 acres which is forested and approximately 3 acres of it is shrub-dominated. Trees sequester relatively large amounts of carbon, and as a result a land alteration GHG analysis was completed, focusing on the project components resulting in vegetation removal where pavement is proposed resulting in loss of carbon sequestration potential of the land, see **Table 6.4-2.**

Table 6.4-2 Summary of Tree Cutting Impacts by Area

Project	Total Impacts	Tree Removal and Change to Pavement (acres)	Tree Removal with Vegetation Remaining (acres)	Brush/Shrub Removal and Change to Pavement (acres)	Proposed Work Components
Aeronautical Development (East Ramp)	6.11 ac (266,151 sf)	6.11 ac	0	0	Tree cutting and removal of vegetation for construction of future aircraft hangars
Taxiway D and Runup Pad Relocation	2.54 ac (80,150 sf)	0.96 ac	0.88 ac	~0.70 ac[(a)]	Tree cutting and removal within areas of proposed pavement - along Taxiway safety area and side slopes, tree removal area will be graded and restored to grass.
TOTAL	**8.65 ac (346,302 sf)**	**7.07 ac (307,969 sf)**	**0.88 ac (38,332)**	**0.70 ac (30,492 sf)**	

a) The Airport currently maintains vegetation around the areas of Upper Gate Pond and Lewis Pond within the Runway Visibility Zone to prevent trees from visually obstructing this area. The proposed Taxiway D will result in approximately 3 acres of this area comprised of a shrub layer to be graded and maintained as grass within the side slopes adjacent to Upper Gate Pond. For the purposes of this analysis, grasses and shrub layers are assumed to provide comparable levels of carbon sequestration, as grasses sequester carbon year-round without releasing it. Of the total area, approximately 0.70 acres will be converted from a brush/shrub layer to pavement.

6.4.1.5 Carbon Sequestration Calculations

According to the MEPA Greenhouse Gas Policy, projects that alter over 50 acres of land must include the analysis of the carbon loss associated with the removal of trees and soil disturbance during the construction period and loss of carbon sequestration.

The first step in analyzing carbon sequestration losses from trees removed as part of the proposed Project is understanding the potential for trees to sequester carbon, and how that may be impacted by cutting (with areas cut either changed to impervious surfaces or left to regrow). Based on estimate provided by EPA[10], in this analysis, the following methodology is applied to changes in forested areas to estimate reductions in carbon sequestration:

> *Conversion Factor for Carbon Sequestered in One Year by 1 Acre of Average U.S. Forest - 0.23 metric ton C/acre/year* × (44 units CO_2/12 units C) = -0.84 metric ton CO_2/acre/year sequestered annually by one acre of average U.S. forest. The negative value in this equation indicates carbon sequestration.*

While there may be geographical variations to the estimates provided above, the methodology presented is sufficient to provide for planning level estimates of carbon sequestration potential of forested areas and estimated reductions associated to tree removal. To estimate carbon sequestered (in metric tons of CO_2) for an acre of forest in one year, multiply the number of acres by -0.84 metric ton CO_2 acre/year, see **Table 6.4-3.**

Table 6.4-3 Carbon Sequestration Estimates

Project	Area of Tree Removal and Conversion to Non-vegetated Land (Pavement)	Carbon Sequestration by Acre Per Year (MTs) (a)(b)	Total Change in Carbon Sequestration (MT) (c)
Aeronautical Development Areas (East Ramp)	6.11 ac (266,151 sf)	-0.84 metric ton CO_2 acre/year	+5.13 MT Carbon/Year
Taxiway D and Runup Pad Relocation	1.66 ac (72,309 sf)	-0.84 metric ton CO_2 acre/year	+1.40 MT Carbon/Year
TOTAL	**7.77 ac (338,461 sf)**		**+6.52 MT Carbon/Year (14,374 lbs./Year) +195 MT Carbon over 30-Year Period**

1 Metric Ton (1.1 Short Tons) = 2,204 lbs.
A carbon sequestration factor was derived from EPA's estimate in *U.S. Greenhouse Gas Emissions and Sinks: 1990–2020* of 0.57 metric tons of carbon sequestered per hectare per year (or 0.23 metric tons of carbon sequestered per acre per year). https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references, 9/7/2023.

a. The negative value in this equation indicates carbon sequestration. A positive value indicates a loss in carbon sequestration.

[10] USEPA. (2020). "Greenhouse Gases Equivalencies Calculator- Calculations and References." Accessed September 7, 2023. https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references

The above analysis of carbon sequestration, and project related losses to carbon sequestration from tree removals, within areas of the Airport being converted from forested area to pavement, equals, in a one-year, an estimated loss to carbon sequestration of +6.52 MT Carbon/Year (14,374 lbs./Year), and approximately +195 MT Carbon over 30-Year Period.

One-Time Release of Carbon from Tree Cutting

The proposed project related to tree cutting also results in a one-time release of carbon emissions due to the release of carbon stored within above ground and below ground forest related carbon stores. A quantitative analysis of one-time carbon releases from tree clearing activities is provided below, based on the EPA's emissions estimates of carbon stores for 1 acre of forest land[11] as follows:

- U.S. forests in 2020 carbon stock is estimated at 206 metric tons of carbon per hectare (or 83 metric tons of carbon per acre) (EPA 2022),
- The estimate is composed of the five carbon pools: above ground biomass (55 metric tons C/hectare), below ground biomass (11 metric tons C/hectare), dead wood (10 metric tons C/hectare), litter (14 metric tons C/hectare), and
- Soil carbon, which includes mineral soils (90 metric tons C/hectare) and organic soils (26 metric tons C/hectare).

The analysis uses 55 MT/C/Hectare (22.26 MT/C/Acre)[12] for the above ground forest biomass store of carbon to arrive at an estimate of up to 175 MT/C released from carbon stores due to cutting. However, the project is anticipated to result in a lower amount as carbon stores being released as harvested wood products post-harvest will continue to contain carbon within the harvested tree (e.g., lumber).

Carbon Offsets and Future Forest Preservation

The Project related carbon releases and loss in carbon sequestration are proposed to be offset from the Airport's extensive forested areas north of the airfield. In this undeveloped area, approximately 110 acres of dense forest exists north of Upper Gate Pond and Lewis Pond, adjacent to the Hyannis Pond Wildlife Management Area (365 Acres). Within the 110-acre area, approximately 37.5 acres is identified in the Master Plan/Airport Layout Plan as Non-Aeronautical Development Areas. Using the above factors for carbon sequestration (-0.84 MT/C/Acre) the Airport's forests land within this area results in 92.40 MT/C/Year in carbon sequestration.

[11] EPA, Greenhouse Gases Equivalencies Calculator - Calculations and References, 2023. https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references

[12] 1 Hectare = 2.47 Acres

Thes Airport's sufficient amount of forested areas remaining will continue to provide an overall positive impact on carbon sequestration. The Airport will investigate opportunities for tree planting/replanting within compatible areas of the airport, as part of future Projects and within the Town of Barnstable, as feasible, with future grant and funding opportunities from FAA and MassDOT

The Airport will also pursue options to preserve and protect forested land through a conservation restriction/easement. However, it should be noted that any release of obligated airport property invokes certain Federal requirements. The airport must seek FAA for review and approval for changes to its land use. If Federal funds were originally used to acquire the land, the FAA must also approve disposition of the Federal share of the sale proceeds.

6.4.2 Climate Adaptation and Resiliency (MEPA)

Cape Cod Gateway Airport recognizes the increasing importance of climate resilience and adaptation in ensuring the long-term sustainability and functionality of its facilities. Located in a region vulnerable to the impacts of climate change, the Airport is committed to proactively addressing climate change challenges. An updated Resilient Massachusetts Action Team (RMAT) report generated for the Project is included as **Appendix F**. The RMAT model identifies urban and riverine flooding, extreme precipitation, and extreme heat as potential climate related threats to the Airport. The Climate and Resiliency Interim Protocol encourages, but does not require, projects to utilize the recommended design standards and associated methodologies associated with Tier 1, 2, or 3 classified projects.

According to the Town of Barnstable 2022 Hazard Mitigation Plan Update, workshops conducted through the Municipal Vulnerability Preparedness (MVP) Program identified the Town's vulnerability to several natural hazards including flooding, high winds, winter or extreme weather, coastal erosion, sea level rise, wildfire, and climate change and ocean acidification. The risk assessment conducted is based on past occurrences and identifies windstorms and severe winter weather particularly threatening to the Airport.

Windstorms

Massachusetts is susceptible to both extreme wind events such as hurricanes and tornadoes but also windstorms that do not have any other associated characteristics other than the movement of air (i.e., no precipitation). According to the Hazard Mitigation Plan Update, the Town of Barnstable is located in a Zone II, "which means the community is susceptible to winds of up to 160 mph and is also located in a hurricane susceptible region." Windstorm events can occur regularly in Barnstable and can lead to fallen trees or power lines, roof damage and dangerous marine conditions. Climate change has the potential to lead to increased severe storms that can cause more damage across the state.

Severe Winter Weather

The Hazard Mitigation Plan Update lists severe winter weather as a climate relates risk to the Barnstable area. Severe winter weather such as blizzards and ice storms are common on an annual basis throughout Massachusetts, with the Town of Barnstable being susceptible to a combination of both snow and coastal flooding during a winter storm event. These storms can down trees, cause lengthy, widespread power outages, damage property and even cause fatalities.

Infrastructure is at risk and may be impacted directly by the winter storm event or by associated power outages and the inability to use safe transportation routes. Research indicates that the entire state is at risk for frequent winter storms.

Wildfire

Wildfires are typically non-structural fires that occur in vegetated areas such as grass, shrubs, and forested areas. Wildfires not only destroy the vegetated areas where they occur, but they can also impact the built environment including structures, if in close proximity. According to the 2018 Massachusetts Integrated State Hazard Mitigation and Climate Adaptation Plan, the southern part of Massachusetts is particularly susceptible to wildfire due to the availability of fuel, impact of offshore winds and increasing development. Barnstable and Plymouth Counties are identified as the most fire-prone due to their vegetation, sandy soil, and the presence of a drying wind.

The proposed Projects described herein do not increase the risk of wildfire in the vicinity of the Airport. The Airport's emergency response firefighting equipment enables the Airport to provide rapid response to surrounding communities should a wildfire erupt.

Increased Flooding/Extreme Precipitation

Future climate predictions for the Northeast suggest more frequent and intense rainfall, with an average annual precipitation increase of 4.42 inches by 2090 (ReslientMA.org/maps, RCP4.5 scenario). All current and future upgrades to the stormwater management system will be designed and sized to accommodate for 10-year storm events and peak precipitation values derived from the National Regional Climate Center (NRCC) for each rain event to account for the predicted increase in rainfall quantities and frequency for the region. The Airport is not located within a mapped floodplain.

The Project is designed to meet the stormwater management requirements for reconstruction of existing infrastructure and additional pavement associated with the runway extension. These stormwater features will upgrade outdated or undersized stormwater infrastructure as construction takes place.

Extreme Heat

The Municipal Vulnerability Preparedness (MVP) report for the Town of Barnstable[13] predicts future weather conditions to include more frequent heat waves and droughts, as well as changes to coastal resource areas, with significant implications for the seasonal economy, In Massachusetts, temperatures are projected to increase significantly over the next century. Winter average temperatures are likely to increase more than those in summer.

Estimates for the rise in temperatures is up to 3.6°F by 2030 (Resilientma.org, Interactive Map). To address extreme heat, and heat related impacts, municipalities can adopt and encourage green infrastructure, white roofs, landscaping for parking lots and redevelopment. The Airport's open space, including the significant areas of grassland, along with forested areas, functions as green infrastructure providing evapotranspiration and cooling to surrounding helping to minimize and reduce the potential for heat island impacts beyond the Airport boundaries.

Urban Heat Island Effect

Urban heat island (UHI) effect from cutting trees associated with Taxiway D, East Apron aviation development areas, and offsite within easement areas for airspace protection, is not anticipated. UHI effect results from thermal radiation of paved surfaces in proximity to residential and business structures, which results in higher ambient air temperature relative to natural, vegetated, rural areas. UHI is influenced by several parameters such as reduction in evapotranspiration, building materials, impervious cover, and wind speed (Myrup, 1969).[14]

UHI is not expected as a result of the Project. Pavement proposed in areas of the airport are balanced by ample vegetation (trees, grass, shrubs) on the airfield surrounding impervious/paved areas. Obstruction removal activities (off-airport) within future easement areas consists of selectively cutting trees that penetrate the airspace. Tree removal as a result of airspace allows for forest understory for regrowth to heights that do not penetrate the protected airspace.

Vegetated areas, including grassland areas, on and off the airport, will continue to function as a vegetation buffer (providing cooling via evapotranspiration) to surrounding neighborhoods, reducing the potential for UHI surrounding the airport. No pavement is being added in obstruction removal easements, and therefore, not adding impervious cover that would contribute to UHI.

The assessments reviewed above form the basis for adaptation strategies discussed in this section. Listed as a critical facility to the Town of Barnstable and the region, the Airport is committed to investing in infrastructure improvements to withstand the changing climate and to continue to play

[13] Town of Barnstable Municipal Vulnerability Preparedness Report, 2020.

[14] Myrup, Leonard O., A Numerical Model of the Urban Heat Island, Journal of Applied Meteorology and Climatology, Dec 1969.

a pivotal role in aiding in disaster response and recovery. In alignment with local and regional plans including the Cape Cod Regional Policy Plan, the Airport has made efforts to ensure adaptation and resilience.

The Airport plans to enhance flood protection through installing new leaching catch basins and infiltration chambers, according to airport drainage design guidelines, to maintain existing runoff. Efforts will also be made to minimize new impervious areas to the maximum extent practicable while adhering to FAA guidelines.

The Airport has also developed and regularly updates its emergency response plans to ensure the safety and well-being of passengers, staff, and the community in the event of climate-related emergencies. Moreover, the Airport is committed to reducing its carbon footprint through initiatives (listed in section 6.5.2) such as adopting energy-efficient technologies, smart grid, installing renewable energy sources, and implementing sustainable land use practices.

6.4.3 Impact Summary

The FAA has not established a significant threshold for Climate. It is assumed that climate related impacts to aircraft and the Airport will be positively enhanced by adding additional length to Runway 15-33 and enhancing the efficiency of the taxiway layout and geometry. The Massachusetts State Hazard Mitigation and Climate Adaptation Plan (2018), notes that "high temperatures may also impact airplane operations. If the length of existing runways is not sufficient under higher temperature conditions, planes may not be able to take off when there is less lift available."

Under future scenarios for high temperatures and resulting less density to air (reduced lift for taking off aircraft) could lead to need for increased runway length requirements for aircraft due to diminished performance in such conditions. (Resilient MA, 2018). It is noted that high heat can soften the asphalt of airport runways, impairing airplane movement" (page 4-168) and reducing the life span of the pavement. The proposed Projects are consistent with, and respond to, potential future climate scenarios of higher by increasing runway length to maintain safe aircraft operations.

Furthermore, as it relates to Project impacts to the environment, no flooding or heat island effects are anticipated based on the Projects limited impacts to natural resources. Where tree cutting Is proposed for the East Ramp aviation development areas, and from Taxiway D, the overall impacts to climate are minimal given the large areas of forested lands in the northern section of the Airport, as detailed in the carbon sequestration analysis in section 6.4.1.5.

Based on this information, there are no significant impacts on the climate as a result of the Proposed Action based on the Preferred Alternative.

6.5 Natural Resources and Energy Supply (NEPA)

6.5.1 No-Build Alternative

The No-Build Alternative assumes that the existing Airport footprint and infrastructure would remain unchanged. No natural resources would be used for construction activities. Moreover, energy demand would not increase as a result of the terminal expansion.

6.5.2 Proposed Action

This section addresses the impact associated with the Proposed Action's consumption of natural resources, including water, asphalt, wood, and energy supplies (e.g., natural gas, and aircraft fuel). FAA Order 1050.1F, Exhibit 4-1, indicates that FAA has not established a significant threshold for Natural Resources and Energy Supply. However, within the EA/EIR review process, project proponents need to consider factors with "the potential to cause demand to exceed available or future supplies of these resources." The following paragraph provides further details on the Project's use of natural resources and potential for environmental consequences.

Natural Resource Materials

Construction materials considered under this category would be used during construction of the proposed Project. As noted above, construction materials for typical airport construction projects contain asphalt, aggregates (sand, gravel), and wood, and fuels. The highest consumption of natural resources related to the project will be the use of asphalt to extend the runway and related to taxiway reconstruction and geometry reconfiguration (Taxiway D and Taxiway B). This will result in a net increase in asphalt surfaces and the related materials as noted previously in sections on Land Alterations.

The total amount of fill and excavation quantities are provided in **Table 6.5-1** for the new and reconstructed surfaces, at a planning level estimate, based on preliminary design >10%. The proposed Project is only at the conceptual phase and will not advance to further design until the project has received permitting approvals.

Calculations of natural resources are approximate totals and based on the assumption that cut/fill materials (e.g., soils) will be comprised of existing onsite materials to the extent possible.

Table 6.5-1 Cut/Fill Volumes

Project	Cut (CY)	Fill (CY)	Waste (CY)	Borrow (CY)
Runway 15-33 Extension	88,400	33,700	54,700	0
Taxiway B	11,300	40,000	0	23,865
Taxiway D (2:1 Slope)	60,800	43,300	17,500	0

Material from the onsite excavation to the extent feasible, will be used to fill areas of the airport (to increase elevation from existing to proposed) to limit material borrowed from outside the construction limits. Excavated material in excess of fill requirements needed, may require disposal of the material offsite. Where feasible, the designer of the project during the design phase will balance cuts and fill to avoid the need for offsite disposal.

Energy Consumption

Electricity consumption is associated with airfield lighting as well as terminal building/hangars. New or reconstruction of infrastructure represents an improvement to the Airport's electrical system via the use of efficient materials reducing the expected energy requirement of the airport overall.

As noted previously, the Airport's future microgrid project will utilize both renewable energy generation and storage technology, reducing the Airport's requirements for energy from the Region's electrical grid.

Table 6.5-2 Proposed Electric Use Reduction Strategies

	Thermal Limits	Envelope, air infiltration, energy recovery	Electrification	PV, EV, Energy Storage
Proposed Stretch Code & Opt-In Code	Sets maximum allowable heating and cooling demand limits (applicable to certain commercial buildings)	Envelope backstops, better energy recovery and air infiltration	Electrification readiness	PV readiness and EV readiness
MEPA Best Practices	Same	Same	Full electrification strategy	PV readiness and EV readiness + % installation targets

In particular, the future micro grid will allow the Airport to commit to MEPA best practices for reducing building heating fuel usage, and commit to electrical sources for heating, lighting, and building systems. These proposed new electrical commitments are anticipated to be supplied from the microgrid in the near future (2026), and ample onsite renewable energy sources (e.g., Solar PV).

As a result, the proposed Project will reduce reliance on traditional fuel sources, lower emissions by committing to best practices for efficient and decarbonized buildings and enhance overall regional grid efficiency and resilience when combined with the microgrid. During the construction phase, a temporary increase in energy consumption is anticipated. This temporary increase in fuel (e.g., construction vehicles and machinery) can be met by available local/regional fuel supplies.

Aviation Fuels

While aircraft activity at the Airport is forecasted to increase into the future, this is the result of national and regional/local trends. The proposed Projects do not per se increase aviation activity at the Airport. Accordingly, the use of aviation fuels at the Airport is not anticipated to increase as a result of the Projects. Assuming no future development of electric aircraft (manned and unmanned) overall, the use of aviation fuels, nationally, at CCGA is anticipated to decrease in future planning scenarios – based on zero carbon emissions from all sectors of the economy anticipated adoption of various types of electric aircraft. In July 2023, the FAA released an implementation plan detailing the steps it will need to take to safely enable advanced air mobility (AAM) operations[15] in the near term. The "Innovate28" plan[16] includes various components and the sequence they will occur in for operations to be at scale at one or more sites by 2028. The plan addresses how the FAA will certify aircraft and pilots, manage airspace access, ensure pilot training, develop infrastructure, maintain security, and engage communities.

FAA is supporting a Sustainable Aviation Fuels (SAFs) initiatives[17]. SAF is a biofuel used to power aircraft that has similar properties to conventional jet fuel but with a smaller carbon footprint. Depending on the feedstock and technologies used to produce it, SAF can reduce life cycle GHG emissions dramatically compared to conventional jet fuel.

Some emerging SAF pathways even have a net negative GHG footprint. SAFs lower carbon intensity makes it an important solution for reducing aviation GHGs, which make up 9%–12% of U.S. transportation GHG emissions, according to the U.S. Environmental Protection Agency. As appropriate, CCGA will seek providers of SAFs at the Airport in coordination with based aviation companies, fuel suppliers, and aircraft owners' organizations.

Water and Sewer

The proposed Project, mainly the terminal building enhancements, is anticipated to result in a slight increase in water and wastewater usage. Water usage by the airport in 2022 is 904 CCF (one hundred cubic feet)[18] or 676,192 gallons. All the municipal systems have an adequate supply of these resources.

6.5.3 Impact Summary

The proposed Projects are not anticipated to result in a significant impact to regional or local energy sources, including electricity, fuels, and use of water and wastewater resources. As confirmed by the information provided above, adequate regional and national energy/material supplies are available

[15] Advanced Air Mobility (AAM) is an umbrella term for aircraft that are likely highly automated and electric. These aircraft are often referred to as air taxis or electric Vertical Takeoff and Landing (eVTOL) aircraft.

[16] https://www.faa.gov/sites/faa.gov/files/AAM-I28-Implementation-Plan.pdf, accessed Nov. 2023.

[17] https://www.faa.gov/sustainability

[18] 1 CCF = 748 gallons of water

for the resources needed for the Projects. The increase in energy usage will be offset by the Airport's future microgrid through generation of renewable energy sources and storage – and anticipated to result in less dependence of grid supplied electricity and gases, as well as fuel for transportation including cars, regional buses, and aircraft.

Construction activities are anticipated to result in temporary energy and fuel needs that are met by the regional and local fuel supplies. The Proposed Action will have no significant effect on energy consumption, and the use of building materials or natural resources are anticipated to be adequately supplied for the actions proposed in this EA.

6.6 Noise (MEPA/NEPA)

For aviation noise analyses, through FAA Order 105014 CFR part 150, the Federal Aviation Administration (FAA) has determined that cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of the Day Night Average Sound Level (DNL). The DNL accounts for the noise levels of all individual aircraft events and the time period that these events occur. The DNL logarithmically averages aircraft sound levels over a complete 24-hour period, with a 10-decibel adjustment added to all events occurring during nighttime hours (10:00 pm to 7:00 am). The adjustment accounts for increased sensitivity to noise during the quietest nighttime hours.

The FAA has approved the Aviation Environmental Design Tool (AEDT) modeling software for predicting DNL sound level impacts from airports. Noise compatibility or non-compatibility of land use is determined by comparing the aircraft DNL values surrounding an airport to the FAA's land use compatibility guidelines. These guidelines indicate that all land uses are compatible with a DNL below 65 dBA. Under FAA Order 1050.1F, paragraph 4-3.3, the Significance Threshold for Noise and Noise-Compatible Land Use is:

"The action would increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the No Action alternative for the same timeframe. For example, an increase from DNL 65.5 dB to 67 dB is considered a significant impact, as is an increase from DNL 63.5 dB to 65 dB."

6.6.1 No-Build Alternative

The AEDT model was utilized to assess future no-build conditions. This included utilizing the future operations data developed in the 2022 Master Plan based on existing runway length conditions. Utilizing the data shown in **Tables 6.6-1 and 6.6-2** below, annual DNL Contours were generated using the AEDT noise model. Total operations forecasted for 2040 for all aircraft categories were 73,002, an increase of 5,652 operations, or 8.3% over the 2019 data (67,350 total operations in 2019). Of these, 5,564 were Touch and Go, accounting for 7.6% of Aircraft operations, a decrease of 1.6% from 2019 data (6,203 operations touch and go operations total).

Based on the modeling, assuming the no-build alternative, the 70 and 75 dBA DNL contours are entirely within the Airport property. The 65 dBA contour slightly extends into commercial land use across Yarmouth Road. **Figure 6.6-1** shows that the 65 dBA DNL sound contour (green polygon) generally falls within the airport property, extending just beyond the property to the east near Yarmouth Road. These commercial facilities are all below a DNL of 70 dBA, which is the noise compatibility threshold of commercial land uses. Therefore, the land use surrounding the Airport under the future No-Build Alternative is noise compatible as all residences are exposed to noise levels below a DNL of 65 dBA and all commercial facilities are below a DNL of 70 dBA as described by the FAA's Order 1050.1F. Under this scenario, no changes in the number of flights, flight patterns, aircraft types, or other factors that may affect noise would occur. Noise levels would be similar to current noise levels.

Table 6.6-1 2040 Runway Utilization

Runway 15	Runway 33	Runway 6	Runway 24
24.4%	30.2%	14.8%	30.6%

Table 6.6-2 2040 Forecasted Operations Data

Aircraft	AEDT Code	Aircraft Type	Ann Ops	Daily op	Day Op	Night Op
Generic Single	C172	Piston	7,136	19.55	18.26	1.29
Piper Cherokee (PA28)	P28A	Piston	1,558	4.27	3.99	0.28
Cirrus SR22	SR22	Piston	1,381	3.78	3.53	0.25
Pilatus PC-12	PC12	Turboprop	11,146	30.54	28.52	2.02
Tecnam P2012 Traveller	P212	Piston	28,850	79.04	73.83	5.22
Cessna Chancellor	C414	Piston	691	1.89	1.77	0.12
Beechcraft King Air	B360	Turboprop	9,806	26.87	25.09	1.77
Cessna Citation Excel	C56X	Jet	1,380	3.78	3.53	0.25
Cessna Citation Sovereign	C680A	Jet	1,201	3.29	3.07	0.22
Hawker 800	H25B	Jet	347	0.95	0.89	0.06
Pilatus PC-24	PC24	Jet	660	1.81	1.69	0.12
Bombardier Challenger 300	CL30	Jet	1,233	3.38	3.16	0.22
Embraer Phenom 300	E55P	Jet	424	1.16	1.08	0.08
Airbus 220	A220	Jet	270	0.74	0.69	0.05
Gulfstream 4	GLF4	Jet	469	1.28	1.20	0.08
Gulfstream 5	GLF5	Jet	208	0.57	0.53	0.04
Bombardier Global Express	GLEX	Jet	170	0.47	0.44	0.03
Eurocopter EC 145	EC45	Helicopter	254	0.70	0.65	0.05
Sikorsky S-76	S76	Helicopter	254	0.70	0.65	0.05
	Total		67,438			
Touch and Go Operations			5,564			
Total Operations			**73,002**			

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Figure 6.6-1
Aircraft Only Annual Day Night Level - No Build Alternative

6.6.2 Proposed Action

The proposed Projects are not anticipated to generate an increase in different aircraft operational activity at the Airport as operations are forecasted to increase regardless of the implementation of these projects (see Table 1.4-3 Annual Operations Forecast by Type). Consequently, impacts to community noise levels are not expected. Based on the future runway conditions using the above referenced operations data, AEDT modeling indicates that the 70 and 75 dBA DNL contours are entirely within the Airport property. The 65 dBA contour slightly extends into the commercial land use across Yarmouth Road, similar to the no-build conditions. **Figure 6.6-2** shows that the 65 dBA DNL sound contour generally falls within the airport property, extending just beyond the property to the east near Yarmouth Road. These commercial facilities are all below a DNL of 70 dBA, which is the noise compatibility threshold of commercial land uses. Therefore, the land use surrounding the Airport under the future Proposed Action condition is noise compatible as all residences are exposed to noise levels below a DNL of 65 dBA and all commercial facilities are below a DNL of 70 dBA as described by the FAA's Order 1050.1F. Under this scenario, noise levels would be similar to current noise levels.

6.6.3 Construction Noise Impacts

There will be a temporary increase in aviation-related noise during the construction of Runway 15 extension within the take-off and landing approach paths of Runway 6-24. All aviation activity would shift to Runway 6-24. This is consistent with the recent past project of reconstructing Runway 6-24, where all activity was shifted to Runway 15-33.

Noise impacts anticipated would be minimal and temporary due to demolition and construction activities. While sound levels resulting from construction activities vary greatly depending on the type of equipment and various conditions, as a conservative measure, the Project will include a noise mitigation plan to minimize, to the extent practicable, the generation of sound levels that will impact off-site receptors. The noise mitigation plan will involve mitigation measures such as:

- Allowable construction timeframes will adhere to local requirements, which are anticipated to be work hours between 7:00 a.m. and 5:00 p.m., and major activities such as excavation or demolition will typically be limited to normal working hours;
- In accordance with Massachusetts Vehicle Idling Regulations, idling of construction equipment will comply with 310 CMR 7.11;
- Instituting a proactive program to ensure compliance with the applicable regulations or ordinances for noise limitation;
- Using appropriate mufflers on all equipment and ongoing maintenance of intake and exhaust mufflers;
- Muffling enclosures on continuously running equipment, such as air compressors and welding generators;
- Replacing specific construction operations and techniques by less noisy ones where feasible;
- Selecting the quietest of alternative items of equipment where feasible;

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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

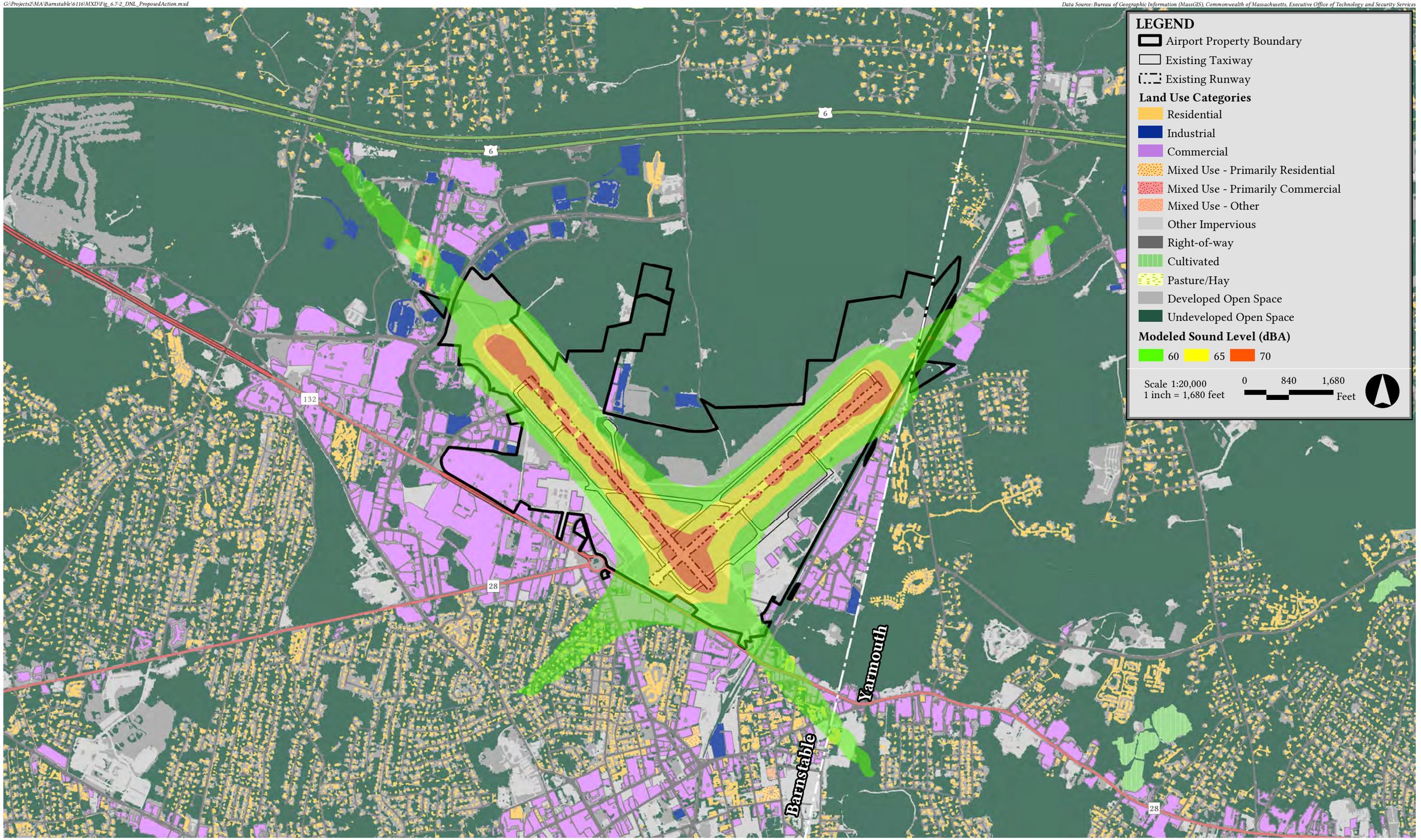

Figure 6.6-2
Aircraft Only Annual Day Night Level - Proposed Action

- Scheduling equipment operations to keep average noise levels low, to synchronize the noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels;
- Locating noisy equipment at locations that protect sensitive locations by shielding or distance;
- Construction equipment will be required to be properly maintained, lubricated, and fitted with properly functioning muffler systems; and
- To the extent practicable, specific activities such as crushing and pulverizing, as well as equipment staging areas, will be located at appropriate distances from residential receptors.

Specific mitigation measures will be incorporated into the contract document based on the anticipated activities and impacts related to each of the Project construction phases. Project activities will adhere to MassDEP's Noise Pollution Policy at 310 CMR 7.10.

6.6.4 Indirect/Secondary Impacts

Indirect and/or secondary impacts from noise are not expected from the Proposed Action, such as those occurring later in time or farther removed in distance. The Project is not expected to result in an increase in noise, including impacts from changes to traffic patterns or growth induced noise. No indirect or secondary impacts are expected for noise compatible land uses.

*6.6.5 **Mitigation** Measures*

The proposed Projects do not exceed FAA noise thresholds, and no mitigation is necessary. While the proposed Projects are not anticipated to exceed FAA noise thresholds, the preferred alternative for Taxiway D/Taxiway E removal, includes a noise barrier along the runup pad for the relocated Taxiway D adjacent to the existing runup pit. The noise wall would help buffer noise from aircraft to areas surrounding the airport, particularly the north.

FAA prohibits restrictions from the Airport on flight paths, hours of operation and restricted access to airports. Federal law prohibits restricting the route by which an aircraft has access to the airport to aid in noise abatement. As discussed in Section 5.9, the airport has a long-standing voluntary noise abatement flight procedures for visual flight rules. These procedures are periodically re-evaluated and updated, as necessary.

Additionally, there are voluntary quiet hours between 10 p.m. and 6 a.m. when airport users are encouraged to restrict their flights. Touch and go nighttime flights are also prohibited. These noise abatement measures are guided by safety considerations as well as federal law. Ultimately, pilots must have control over their flight procedures to ensure safe takeoff and landings based on weather conditions and aircraft capabilities. The Airport coordinates with all users of the airport to mitigate noise issues and maintains multiple ways to report complaints when made including in person, over the phone and online reporting (see https://flyhya.com/pilot-info/noise-abatement/).

Please note that low flying is prohibited by Federal regulations except under certain conditions such as take-off or landing. See Title 14 Code of Federal Regulations, Section 91.119 Minimum Safe Altitudes.

With regards to consideration of noise mitigation for current and future operations, the Airport will consult with FAA and primary Airport air taxi operators such as Cape Air on flight path modifications that may serve to minimize noise impacts.

6.6.6 Impact Summary

The proposed Projects do not exceed FAA noise thresholds, and no mitigation is necessary. While the proposed Projects are not anticipated to exceed FAA noise thresholds, the preferred alternative for Taxiway D/Taxiway E removal, includes a noise wall along the runup pad for the relocated Taxiway D adjacent to the existing runup pit. The noise wall would help buffer noise from aircraft to areas surrounding the airport, particularly the north. Based on this information, there are no significant impacts on noise as a result of the Proposed Action.

6.7 Biological Resources (MEPA/NEPA)

FAA Order 1050.1F (Paragraph 4-3.3; Exhibit 4-1; 7/16/15) includes "Factors to Consider" for Biological Resources, as follows:

- "The action would have the potential a long-term or permanent loss of unlisted [sic] plant or wildlife species, i.e., extirpation of the species from a large project area (e.g., a new commercial service airport);
- Adverse impacts to special status species (e.g., state species of concern, species proposed for listing, migratory birds, bald and golden eagles) or their habitats;
- Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or their populations; or
- Adverse impacts on a species' reproductive success rate, natural mortality rates, non-natural mortality (e.g., road kills and hunting), or ability to sustain the minimum population levels required for population maintenance."

There will be no significant impacts on biological resources associated with this project.

6.7.1 No-Build Alternative

The no build alternatives will not impact biological resources on the Airport.

6.7.2 Proposed Action

6.7.2.1 Threatened and Endangered Species

With regards to the federally listed species identified as possibly present at the Airport, northern long-eared bat (NLEB) and the American chaffseed, review and consultation with USFWS through IPaC's Determination Key was completed. A "no effect" for the American chaffseed was determined for all Projects Airport wide (see **Appendix I**). As per the determination for the American chaffseed, the Proponent will re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the

Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated.

For NLEB, a determination of "may affect" resulted for the bat for the Taxiway D and East Ramp projects due to these projects requiring mature tree removal greater than 3-inches diameter at breast height. Taxiway D and the East Ramp expansion area contains portions of forested upland areas. There are no known hibernacula (e.g., caves) on the Airport property or on off-airport avigation easement parcels, or within 0.25 miles.

As a mitigation measure, any necessary tree removal will be accomplished during time periods appropriate for minimizing impacts to any potential bat populations. If necessary, the timing of any tree removals will be consistent with recommended conservation measures designed to take place outside of the summer roosting period (April through September), and optimally during the winter months (October 1 through March 31 when possible).

No work will occur within NHESP mapped habitat and there will be no impacts to state-listed species.

6.7.2.2 Wildlife

The majority of the proposed Projects will take place in previously developed areas and/or actively used portions of the airfield. The majority of wildlife is incompatible with aviation activities due to the safety hazards it presents with aircraft. The Airport maintains a wildlife exclusion fence to prevent larger mammals from accessing the airfield and implements other measures to dissuade wildlife from grazing, nesting, or feeding within the active operating areas.

With regards to potential habitat impacts associated with wetland resource areas, the altered areas associated with Taxiway D and work within Upper Gate Pond will be assessed as part of a Wildlife Habitat Evaluation completed as outlined in the Massachusetts Department of Environmental Protection's *Wildlife Habitat Protection Guidance for Inland Wetlands*[19] (the Guidance), Appendix B: Detailed Wildlife Habitat Evaluations. he important wildlife habitat features documented in the proposed impact areas will be incorporated into the wetland replication plan to further contribute to the protection of the wildlife habitat interest of the WPA by meeting the general conditions of 310 CMR 10.60(3)[20] and other applicable performance standards relative to restoration or replication of altered resource areas. As such, the Project will not have an adverse effect on important wildlife habitat features either locally or in the region.

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19 Massachusetts Department of Environmental Protection. Wildlife Habitat Protection Guidance for Inland Wetlands (2006). http://umasscaps.org/pdf/wldhab.pdf.

20 310 CMR 10.60(3) contains general conditions for the restoration and replication of altered habitat to ensure that wildlife habitat replication areas, with features similar to the altered wildlife habitat, are incorporated into the Project to the extent such replication or restoration is deemed necessary to demonstrate that there is no substantial reduction in the resource area's capacity to provide important wildlife habitat functions.

6.7.3 Impact Summary

Consultation regarding tree removal in these areas will continue with USFWS under Section 7 under the Interim Consultation Framework as per the determination letter. To identify, and mitigate for possible impacts, it is anticipated that habitat surveys for NLEB will be conducted prior to construction to exclude the presence of any potential bat roosting habitats – which are found generally in mature, upland forested areas.

With the mitigation measures described above, the Proposed Action is not anticipated to alter suitable habitats for the two federally listed species, pursuant to Section 7 of the Endangered Species Act. As such, the Project will not have an adverse effect on important wildlife habitat features either locally or in the region.

6.8 Transportation (MEPA)

6.8.1 No-Build Alternative

Under the No-Build Alternative, the Airport would not implement the Projects. The number and types of vehicles accessing the Airport would be similar to existing trends and projections. The Airport access road would continue to have congestion and traffic delays in certain seasons and at certain times of the day.

6.8.2 Proposed Action

The forecasted increase in terminal passenger design capacity from the current level of approximately 100 passengers per peak hour to a future level of approximately 150 to 200 passengers per peak hour was developed with consideration of many market and operational factors (including, for example, airline and hub consolidation, low-cost airline growth, technology advances, fuel prices, and pilot supply). Such forecasted increases, if they occur, will happen gradually over time.

The following sections present traffic volume changes for three levels of peak passenger activity under the Preferred Alternative, including 0%, 50%, and 100% growth scenarios.

6.8.2.1 Project Trip Generation

As presented in the Master Plan, the estimated landside travel modes and associated average vehicle occupancy (AVO) for Airport passengers and visitors are shown in **Table 6.8-1**.

Table 6.8-1 Travel Mode Shares and AVOs

Characteristic	Personal Auto		Taxi/TNC	Rental Car
	Parking	Pick-up/Drop-off		
Mode Share	40%	25%	25%	10%
Average vehicle occupancy (AVO)	1.25		1.0 [1]	1.0

1. Number of passengers per vehicle, not including driver.

Based on the values in **Table 6.8-1** and recent (2022/2023) parking data from the Airport, the study team estimated the vehicle trips associated with the Baseline Condition and the Preferred Alternative as shown in **Table 6.8-2**.

Table 6.8-2 Daily and Peak Vehicle Trips under Baseline Condition and Preferred Alternative Condition with Various Terminal Activity Levels

Baseline/No Build Condition Terminal Activity Level of 100 Peak Hour Passengers		
	Vehicle Trips	Change from Baseline/ No-Build Condition
Daily	472	0
Peak Hour	81	0
Preferred Alternative with Terminal Activity Level of 150 Peak Hour Passengers		
	Vehicle Trips	Change from Baseline/ No-Build Condition
Daily	708	+236
Peak Hour	122	+41
Preferred Alternative with Terminal Activity Level of 200 Peak Hour passengers		
	Vehicle Trips	Change from Baseline/ No-Build Condition
Daily	944	+472
Peak Hour	122	+82

6.8.2.2 Trip Distribution

As described in the Master Plan, the Airport's market catchment area for commercial passengers is considered all of Cape Cod and towns that abut the Cape Cod Canal to the north. To estimate the geographic distribution of Airport vehicle trips, including the new trips related to the proposed terminal improvements, travel patterns were modeled based on the daily volumes along major roadways serving the Airport, as presented in Section 5.11.1.4. **Table 6.8-3** presents the AADT volumes and associated percentage distribution.

Table 6.8-3 Airport Vehicle Trip Distribution

Direction of Travel	AADT	Percent Distribution
To/from points northwest		
Combined: Iyannough Road, west of Phinneys Lane Attucks Lane, west of Phinneys Lane	33,156	36%
To/from points northeast		
Yarmouth Road/Willow Street, south of Crowell Road	24,001	26%

Table 6.8-3 Airport Vehicle Trip Distribution (Continued)

Direction of Travel	AADT	Percent Distribution
To/from points east/southeast		
Iyannough Road/Route 28, west of Main Street	13,569	15%
To/from points west/southwest		
Falmouth Road, south of Bearses Way	21,108	23%

6.8.2.3 Trip Assignment and Impact to Area Roadways

Based on the Project's trip generation shown in Section 6.8.2.1. and the trip distribution pattern shown in Section 6.8.2.2, the estimated new vehicle trips were calculated by major travel route. **Tables 6.8-4** and **6.8-5** present the resulting daily and peak hour vehicle trips for the 50% and 100% growth scenarios, respectively. As noted earlier, no change in volumes is expected under the 0% growth scenario.

Table 6.8-4 New Project Vehicle Trips under 50% Growth Scenario

Location	Baseline Roadway Volume		New Project Vehicle Trips		Percent Increase in Roadway Volume	
	Daily	Peak Hour	Daily	Peak Hour	Daily	Peak Hour
Combined: Iyannough Road west of Phinneys Lane Attucks Lane west of Phinneys Lane	33,156	2,654	86	16	0.26%	0.60%
Yarmouth Road/Willow Street, south of Crowell Road	24,001	2161	62	11	0.26%	0.51%
Iyannough Road/Route 28, west of Main Street	13,569	1086	35	7	0.26%	0.64%
Falmouth Road, south of Bearses Way	21,108	1689	55	10	0.26%	0.59%

Note: Due to rounding, the sum of new vehicle trips may not match Table 6.9-2 values.

Table 6.8-5 New Project Vehicle Trips under 100% Growth Scenario

Location	Baseline Roadway Volume		New Project Vehicle Trips		Percent Increase in Roadway Volume	
	Daily	Peak Hour	Daily	Peak Hour	Daily	Peak Hour
Combined: Iyannough Road west of Phinneys Lane Attucks Lane west of Phinneys Lane	33,156	2,654	171	31	0.51%	1.14%
Yarmouth Road/Willow Street, south of Crowell Road	24,001	2161	124	22	0.51%	1.30%

Table 6.8-5 New Project Vehicle Trips under 100% Growth Scenario (Continued)

Location	Baseline Roadway Volume		New Project Vehicle Trips		Percent Increase in Roadway Volume	
	Daily	Peak Hour	Daily	Peak Hour	Daily	Peak Hour
Iyannough Road/Route 28, west of Main Street	13,569	1086	70	13	0.51%	1.02%
Falmouth Road, south of Bearses Way	21,108	1689	109	19	0.51%	1.12%

Note: Due to rounding, the sum of new vehicle trips may not match Table 6.8-2 values.

As summarized in **Table 6.8-4**, with a 50% increase in peak hour passenger design capacity at the terminal, area roadways could experience an increase in traffic volume of between 35 and 86 vehicle trips per day and between 7 and 16 vehicle trips per peak hour. These increased trips represent less than a 1% increase in overall traffic volume along each major route to and from the Airport.

As summarized in **Table 6.8-5**, with a 100% increase in peak hour passenger design capacity at the terminal, area roadways could experience an increase in traffic volumes between 70 and 171 vehicle trips per day and between 13 and 31 vehicle trips per hour. These increased trips represent between a 0.51% and 1.30% increase in daily and peak hour volumes, respectively, along the major travel routes.

Under either scenario, such a small number of daily and peak hour increases in traffic volumes travelling to and from the Airport would be imperceptible to local traffic patterns and not have an impact on area roadway or intersection operations. It should also be emphasized that any increase in passenger enplanements, and therefore associated roadway activity, is dependent on a myriad of influencing factors such as airline and hub consolidation, low-cost airline growth, technology advances, fuel prices, and pilot supply. Forecasted increases in enplanements, if they occur, will happen gradually over time. The changes in traffic volumes presented in this chapter reflect a future condition that would evolve over the 20-year planning horizon and not occur as a direct result of the terminal improvements planned under the Preferred Alternative.

6.8.2.4 Parking

As presented in the Master Plan, the existing parking lot in front of the terminal, with 585 spaces. will have sufficient capacity to meet parking demand under the baseline and various forecasted growth scenarios.

6.8.2.5 Other Airport Vehicle Activity

The 645-acre Airport site, in addition to being a commercial transportation facility, also contains more than 40 local business tenants related to passenger airline services, general aviation services, maintenance and servicing of aircraft and aviation equipment, aviation fuel transfer, temporary aircraft parking and long-term aircraft storage, and light transportation warehousing. The majority of the 1,700 on-site employees work for Cape Air, Atlantic Aviation, Griffin Avionics, and the FAA.

The terminal improvements are not anticipated to affect activity associated with these other local business tenants. While the improvements may influence terminal-related services, such as security or food service, any increase in such travel activity is expected to be minor.

6.8.3 Area Transportation Plans

Independent of the Airport plans, a review of on-going studies and planned improvements to roadway, bicycle, and pedestrian facilities was conducted to understand future transportation changes in the surrounding roadway network.

Barnstable Complete Streets – The Town of Barnstable in cooperation with the Cape Cod Commission (CCC) has launched the following studies in the immediate Airport area, which aim to improve safety for all users, including motorists, pedestrians, transit users, and bicyclists. The CCC has drafted a list of priority roadway improvements and include the following projects within a two-mile radius of the Airport:

- *Attucks Lane Share Use Path* – Installation of an approximate 1.3 miles of a shared use path along Attucks Lane from Independence Drive to Route 132.
- *Route 132* – Corridor improvements to include safety improvements for all users. Key intersection upgrades between Bearses Way and the Airport Rotary, which will consist of shared use path and upgrades to pedestrian crossing.
- *Airport Rotary Retrofit/Route 28 Sidewalk* – Converting the existing Airport Rotary into a modern roundabout design with sidewalks on Route 28 from Walton Avenue to Airport Rotary. This project is being conducted by MassDOT staff.
- *Route 28 Shared Use Path* – Installation of approximately 0.8 miles of a shared use path from Airport Rotary to Yarmouth Road. This project is being conducted by MassDOT staff.
- *Barnstable Road Streetscape and Safety Upgrades* – Improvements include incorporating street trees, benches, lighting, assessing mid-block crosswalk locations and upgrades to the existing pedestrian signal equipment and crossings at the intersection of Winter Street and Charles Street.
- *Route 28 at Pitchers Way Intersection Improvements* – Intersection upgrades with multimodal accommodations, including the installation of new signal equipment. This project is being conducted by MassDOT staff.
- *Yarmouth Road Shared Use Path* – Construction of an approximately 1.1 miles of a shared use path from the intersection of Route 28 to the Yarmouth town Line.
- *Phinney's Lane Shared Use Path* – Construction of approximately 2 miles of shared use path from Route 132 to Route 28.
- *Pitchers Way Sidewalk* – Installation of a sidewalk along Pitchers Way from Bearses Way to West Main Street.

Barnstable Airport Rotary - In 2019, a Road Safety Audit (RSA) was prepared for MassDOT for the Falmouth Road (Route 28) at Iyannough Road (Route 132) rotary, also known as the Airport Rotary. The study included several dozen recommendations for potential short-, mid-, and long-term safety enhancements related to traffic operations, roadway geometry, emergency vehicle operations, heavy vehicle operations, and pedestrian and bicycle accommodations.

Route 28 East Hyannis Transportation Corridor Study – The study area spans from Yarmouth Road in Barnstable to East Main Street in Yarmouth, including assessing the signalized intersection of Route 28 and East Main Street. The purpose of the study is to address congestion, safety, and access management concerns, as well as the lack of pedestrian and bicycle facilities along the corridor. Ultimately, the study will develop alternatives that will provide safe and convenient access within the study area for all users of the corridor.

Cape Cod Rail Trail (CCRT) – The CCRT is a protected off-road paved bike and pedestrian path that runs between South Yarmouth to Wellfleet. The existing trail will be extended within Yarmouth to Mary Dunn Road in Barnstable (Phase III). Construction is expected to begin in 2024.

6.8.4 Construction Impacts

Prior to any construction projects detailed in this document, the Airport's selected engineer will produce a Construction Management Plan (CMP) for review and approval by the Town. The CMP will detail the schedule, staging, parking, delivery, and other associated impacts of the construction of the Project. Construction activities will be accommodated within the current Project Site boundaries. Details of the overall construction schedule, working hours, number of construction workers, worker transportation and parking, number of construction vehicles, and routes will be addressed in detail in the CMP to be filed with the Town.

Temporary construction-period air quality impacts are a potential source of negative health impacts for the local community. To avoid or minimize the effects of fugitive dust and exhaust emissions from construction vehicles, appropriate mitigation measures will be employed, such as the use of diesel retrofitted equipment and wetting down areas during construction. To avoid, mitigate, or minimize temporary construction-period noise pollution impacts, the Project will comply with the local ordinances. Efforts will be made to minimize the noise impact of construction activities, including appropriate mufflers on all equipment such as air compressors and welding equipment, maintenance of intake and exhaust mufflers, turning off idling equipment, replacing specific operations and techniques with less noisy ones, and other appropriate noise reduction measures.

6.8.5 Mitigation Measures

The Airport is committed to increasing the number of electric vehicle (EV) charging stations and providing electrical conduit for future EV stations. Additionally, in 2022, the Airport received a $1.95M grant through the US Department of Transportation's Strengthening Mobility and Revolutionizing

Transportation (SMART) Grants Program, to plan, permit, and design a smart microgrid project. The microgrid will ultimately generate and distribute clean, reliable power to the airport and facilitate reliable charging of electric ground fleet vehicles (including buses) and in the future, aircraft.

The Airport does not have an existing Transportation Demand Management (TDM) program and the increase in trips from the terminal improvements, as detailed under different peak hour increase scenarios (see **Tables 6.8-4 and 6.8-5**), will be minimal. Some typical "low hanging" TDM commitments include the following:

- Orientation packets for employees, including information about alternative means of transportation such as rideshare services, tenant-employee carpool options and rideshare matching service with other nearby employers.
- Showers and lockers for employees;
- Lunchroom with a microwave and refrigerator for employees;
- Flexible work schedules for employees;
- Telecommuting accommodations for employees (where applicable);
- "Guaranteed Ride Home" program;
- Transit pass subsidies;
- Secure bicycle parking;
- Carpool and vanpool program; and
- Preferential parking for carpool/vanpool.

6.8.6 Impact Summary

Because of the small number of daily and peak hour increases in traffic volumes travelling to and from the Airport under different peak hour increase scenarios (**Tables 6.8-4 and 6.8-5**) would be minimal and not have an impact on area roadways or intersection operations, impacts from construction and operations associated with the preferred alternative would be considered short-term and minor.

It should also be emphasized that any increase in passenger enplanements, and therefore associated roadway activity, is dependent on a myriad of influencing factors such as airline and hub consolidation, low-cost airline growth, technology advances, fuel prices, and pilot supply. Forecasted increases in enplanements, if they occur, will happen gradually over time. The changes in traffic volumes presented in this chapter reflect a future condition that would evolve over the 20-year planning horizon and not occur as a direct result of the terminal improvements planned under the Preferred Alternative.

6.9 Socioeconomics

6.9.1 No-Build Alternative

Under the No-Build Alternative, the existing Airport footprint would remain unchanged; therefore, no change in scenic qualities, open space or recreational resources would occur.

6.9.2 Proposed Action

Principal social impacts typically resulting from Airport actions include relocation of residences and businesses, alteration of surface transportation patterns, disruption of established communities or planned developments, and significant changes in employment. The Preferred Alternatives would not result in the above-mentioned social impacts. On the contrary, as a major construction project, the Preferred Alternative would result in positive economic impacts to the region and the Commonwealth. The generation of new, temporary construction jobs are anticipated during construction and the purchase of construction materials and services would result in direct and indirect impacts throughout the Commonwealth, along with induced impacts as the initial rounds of spending circulate through the economy.

Potential secondary or induced social impacts related to airport development typically include shifts in patterns of population movement and growth, increased public service demands, and changes in business and economic activity. As stated herein, the purpose and need of the proposed improvements at the Airport is to enhance safety for existing Airport users by meeting FAA Standards. The Preferred Alternative is not designed to increase growth or demand at the Airport, or to change the type or size of aircraft using the Airport. No shifts in population growth or public service demands would be created by the Preferred Alternative; therefore, it is reasonable to assume that there would be no adverse socio-economic impacts as a result of the Preferred Alternative.

6.10 Historical, Architectural, Archaeological, and Cultural Resources (MEPA/NEPA)

6.10.1 No-Build Alternative

The No-Build alternative would not meet the need for Airport infrastructure that complies with FAA planning and design standards and improves overall operational safety and efficiency at the Airport.

6.10.2 Proposed Action

Preparation of an archaeological site avoidance and protection plan (ASAPP) is underway and being drafted by the Project's Cultural Resource Consultant, for submittal to the MHC in December 2023 for review and comment. Available documentation and mapping for the two significant ancient Native American sites (19-BN-827 and 19-BN-828) have been reviewed and field visits made to the locations of sites 19-BN-827 and 19-BN-828 by a Senior Archaeologist, confirming that the sites are outside of proposed Project work areas. The ASAPP will address Pre-Construction, Construction and Post-Construction Activities. Avoidance and protection measures will include installing high-visibility temporary fencing (i.e., orange construction fence) around and barring access to the two significant sites (sensitive cultural resource areas).

6.10.3 Construction Impacts

Based on the mitigation measures noted below, there will not be any construction related impacts to historic resources.

6.10.4 Mitigation Measures

Signs with *No Trespassing* will be posted along the fence to indicate that the sensitive cultural resource areas are off-limits. No access or impact will be allowed within the fenced areas. Construction personnel and contractors will be instructed to neither perform nor permit any construction, excavation, grading, tree stumping, filling, dumping, or the storage or staging of equipment vehicles, or supplies within the boundaries of the fenced area. Trained cultural resource personnel will assist in facilitating the installation of protection measures (i.e., placement of fencing) with monitoring and/or flagging of the limits of the sensitive cultural resource areas. Cultural resource personnel will make field visits to ensure that the avoidance and protective measures are carried out as specified, with photographic documentation prior to, during and after construction. A pre-construction meeting will be held with Project personnel and contractors and cultural resource personnel to review these measures.

The pre-construction activities will involve the following:

- Pre-construction site inspection;
- Photography;
- Construction personnel briefing; and
- High visibility fencing with No Trespassing signs around the sensitive cultural resource areas to be protected.

The construction activities will include avoidance of fenced sensitive site resource areas; and response, reporting, and corrective actions if these conditions are not met. The post-construction activities will include the following:

- Fence and sign removal;
- Post-construction site inspection;
- Photography; and
- Post-construction memorandum.

Cultural resource personnel will conduct a post-construction inspection immediately after the construction phase of the Project to evaluate the condition of the sensitive areas and determine whether or not project-related impacts had taken place within the protected areas. The findings of the inspection will be reported to the MHC and the FAA via a memorandum.

The FAA has not established a significance threshold for Historical, Architectural, Archeological, and Cultural Resources. The Proposed Action is anticipated to result in a finding of No Adverse Effect through the Section 106 process.

6.11 Land Use (MEPA/NEPA)

6.11.1 No-Build Alternative

Under the No-Build Alternative, the existing Airport footprint would remain unchanged; therefore, no incompatible land uses would be introduced, and no surrounding land uses would be altered.

6.11.2 Proposed Action

As discussed in Sections 2.2.3 and 3.3, avigation easement acquisition would be pursued on a willing seller basis for those parcels within both the existing Runway Protection Zones (RPZ) for both runways and the future RPZ for the runway extension of Runway 15. As avigation easements are acquired, some land uses would shift as a result from residential to those more compatible with aviation. Some land uses within the RPZ are already compatible and would not change.

Additionally, four parcels containing buildings that are penetrations into the Runway Object Free Area (ROFA). Should these easements be obtained, or parcels obtained outright, these buildings (or portions thereof) would be removed from the ROFA.

Unless the Airport has control (either through easement or ownership) of parcels, there will be no other change in land uses outside of the current Airport property boundary.

Within the Airport property boundary, there will be some modification of undeveloped, vegetated areas converting to either impervious surface (runway, taxiway, etc.) or maintained turf areas. Please see Table 3.5-1.

6.11.3 Impact Summary

The FAA has not established a significance threshold for land use. There are no specific independent factors to consider for land use. The determination that significant land use impacts is dependent on the significance of other impacts.

The proposed Projects are located on existing Airport property and are consistent with existing aviation uses. The land use alterations summarized in **Table 3.5-1** are not anticipated to have impacts on land use and zoning surrounding the Airport. The proposed Projects are anticipated to have minimal changes in Airport operations, the land use and zoning areas are anticipated to remain compatible, and no adverse effects are anticipated. The Proposed Action will not result in community disruption, business relocations, or negative induced socioeconomic impacts. Based on this information, there are no significant impacts on land use as a result of the Proposed Action.

6.12 Public Health, Environmental Justice, and Children's Environmental Health and Safety Risks (MEPA/NEPA)

6.12.1 No-Build Alternatives

Under the No-Build Alternatives, the Airport would not alter infrastructure or the nature of operations within the Project areas. The existing and projected levels of passenger and aircraft operations at the Airport would not be affected. Therefore, no disproportionate and adverse Project-related public health or environmental effects to environmental justice populations and children's health and safety are anticipated from the No-Build Alternatives.

Conversely, the No-Build Alternatives could result in negative socioeconomic impacts by limiting the ability of the Airport to operate safely and efficiently. In addition, the No-Build Alternatives do not support jobs creation within the community, including direct and induced jobs associated with the construction phase.

6.12.2 Proposed Action (Preferred Alternatives)

6.12.2.1 EJ Analysis

The EJ Analysis Protocol applies to "any project that is likely to cause damage to the environment and is located within a distance of one mile of an Environmental Justice (EJ) population." The Proposed Action does not meet or exceed MEPA review thresholds under 301 CMR 11.03(8)(a)-(b) and will not add 150 or more new adt of diesel vehicle traffic over a duration of one year or more; therefore, the Project is not subject to a 5-mile radius.

The one-mile radius around the Project areas (the Designated Geographic Area [DGA]) was used as the basis for analyzing potential Proposed Action impacts. All EJ populations within the DGA are located in Barnstable and Yarmouth.

The EJ analysis conducted (see Section 5.16.2) identified existing EJ populations and assessed potential existing unfair or inequitable environmental burdens within the DGA. The analysis conducted and findings are summarized below.

- A comparison of rates of four vulnerable health criteria (heart attack hospitalizations, childhood blood lead levels, childhood asthma, and low birth weight) as they relate to statewide averages.
    - Based on the study of vulnerable health criteria, the Towns of Barnstable and Yarmouth meet childhood asthma and low birth weight vulnerable health criteria (see Table 5.16-2). The results show that some of the EJ communities in the DGA are considered vulnerable or subject to at least some level of existing environmental burdens.
- Identification of existing, past, and current potential sources of pollution within a mile of the Airport,

- Analysis of the sources of pollution found that there are 19 MassDEP major air and waste facilities, 54 M.G.L. c. 21E sites, one MassDEP site with AULs, 22 UST systems, 19 EPA facilities, three major routes and one bikeway that intersect the DGA, a commuter rail stop, several parking lots, Cape Cod RTA stops, and one power plant. However, the Project is not anticipated to impact or contribute to any of the listed potential sources of pollution described above nor add to them. Similarly, the Project will not materially exacerbate the existing health burden of the EJ communities around the Project site.

- An analysis using the RMAT Climate Resilience Output Tool to understand potential climate change risks surrounding the Airport and surrounding EJ populations, and
  - Analysis of the RMAT Tool estimated risk ratings for climate parameters (e.g., temperature, precipitation) does not indicate an elevated climate risks for EJ populations within the DGA for the Project Site.
- An analysis using the United States Environmental Protection Agency's (EPA) Environmental Justice Screening Tool (EJSCREEN).
  - The EJScreen analysis results show that none of the environmental and socioeconomic indicators are elevated (> 80th percentile) in the block groups within one mile of the Project Site. Overall, the EJ Screen analysis suggests that there are no potential environmental vulnerabilities in the communities within the DGA.

6.12.2.2 Potential Impacts to Health and Safety

The Proponent has taken steps to minimize and mitigate overall Project impacts. To the extent that impacts exist, the Project's location within an EJ community means that EJ communities will be affected. However, impacts on transportation, air, and climate are diffused and would be present regardless of the Project. The beneficial aspects of the Project are expected to outweigh anticipated impacts.

6.12.2.2.1 Transportation Impacts

The Project is expected to generate approximately 41 additional peak hour vehicle trips for an anticipated increase of 150 peak hour passengers, and approximately 82 additional peak hour vehicle trips for an anticipated increase of 200 peak hour passengers. According to the transportation analysis presented in Section 6.8.2, an addition of 150 peak hour passengers could result in an estimated traffic volume increase of between 7 and 16 vehicle trips per peak hour. These increased trips represent less than a one percent increase in overall traffic volume along each major roadway to and from the Airport. Under the 200 peak hour passengers' scenario, roadways could experience an increase in traffic volumes between 13 and 31 vehicle trips per hour. These increased trips represent between a 0.51 and 1.3 percent increase in peak hour volumes along the major travel routes.

The Project, as currently designed, is expected anticipated to result in +1,139 tons/year to +2,279 CO2 tons per year increase in vehicle related greenhouse gas (GHG) emissions. The mobile source greenhouse emissions are discussed in detail in Section 6.4.1.3.

The Project is not expected to result in a significant increase in vehicle and truck traffic. Impacts on surrounding roadways are anticipated to be minor under both future growth scenarios. The Airport's transportation improvement program that has been developed and will be advanced as a part of the Project.

6.12.2.2.2 Air Quality Impacts

The Preferred Alternatives' effect on air quality will primarily be the result of vehicle and aircraft emissions. It should be noted that the Proposed Action is not anticipated to result in an increase in air traffic operations. In addition, the Airport is located in a NAAQS attainment area. Project-related contributions from vehicles are anticipated to be minor and will not contribute to air pollutant concentrations that would result in an exceedance of the health-based NAAQS. Therefore, no disproportionate adverse effect on EJ populations is anticipated as a result of the Project.

Minor temporary air quality impacts such an increase in air emissions from fugitive dust and construction vehicles are anticipated during construction-period activities. However, various mitigation measures such as appropriate mufflers on all equipment such as air compressors and welding equipment, maintenance of intake and exhaust mufflers, turning off idling equipment, will be taken to reduce and prevent potential impacts.

Air quality impacts and mitigation measures are described in greater detail in Section 6.3.

6.12.2.2.3 Climate Impacts

Future climate conditions are expected to produce conditions which will require adaptation and resiliency from existing facilities. The Project is not expected to produce any direct adverse climate impacts that will affect EJ populations. Aspects of the Project may reduce climate risks including improvements to the stormwater management system, use of onsite energy generation/storage via a microgrid, and use of "green" construction standards for airport tenants. These measures respond to the RMAT Tool analysis output for anticipated climate change effects. Additionally, the proposed Project is consistent with, and responds to future climate scenarios (e.g., heat impacts) by adding runway length to maintain safe aircraft operations.

6.12.2.2.4 Stormwater and Flooding Impacts

The Project is not anticipated to contribute to additional risk to the surrounding areas and to EJ Populations. Although the Project will create approximately 38.5 acres of impervious area, the Project site has been designed to mitigate any impacts that are created as a result of the new impervious area. The Airport intends to install new leaching catch basins and infiltration chambers to enhance flood protection during storms and flooding events.

6.12.2.2.5 EPA's Endangerment Finding for Lead Emissions from Aircraft Engines

In October 2023, EPA issued a final determination for emissions of lead from aircraft that operate on leaded fuel cause or contribute to air pollution which may reasonably be anticipated to endanger public health and welfare under the Clean Air Act.

EPA's determination advances its L*ead Strategy to Reduce Lead Exposures and Disparities in U.S. Communities*[21] aimed at reducing lead exposure in communities. With the endangerment finding, EPA under the Clean Air Act, will propose and promulgate regulatory standards for lead emissions from certain aircraft engines. Concurrently, the FAA will develop standards that address the composition, chemical, or physical properties of an aircraft fuel or fuel additive to control or eliminate aircraft lead emissions. EPA and FAA have started work on regulatory options to address lead emissions from aircraft engines.

Aircraft that use leaded aviation gasoline are generally small piston-engine aircraft. Jet aircraft used for commercial transport do not operate on leaded fuel. EPA notes that, levels of airborne lead in the United States have declined 99% since 1980, while acknowledging that emissions from aircraft that operate on leaded fuel may still pose risks to nearby communities, including those with environmental justice concerns.

While EPA's actions on leaded aviation fuel represent an important national level to address the concerns associated with leaded aviation fuels, piston aircraft operations are not expected to increase due to the proposed project activities.

6.12.2.3 Public Health and Children's Environmental Health and Safety Risks

In response to the DEIR scope, this section provides a discussion of reasonably foreseeable public health consequences from any environmental impacts of the Project, including any impacts that might exacerbate the vulnerable health EJ criteria discussed in Chapter 5.0. In accordance with the MEPA Protocol for Analysis of EJ Impact and FAA's 1050.1F Desk Reference, and in accordance with Executive Order 13405, Protection of Children from Environmental Health Risks and Safety Risks, this section also serves to identify and assess the potential health and safety risks that could disproportionately affect children, specifically related to air quality and noise.

A comprehensive review of the vulnerable health criteria and information included in the DPH EJ Tool to assess public health conditions in the area surrounding the Project Site is provided in Section 5.16.2 as part of the EJ evaluation. The key vulnerability criteria that are likely to be associated with air quality impacts from traffic include heart attacks and asthma. Childhood asthma was exceeded in the EJ communities within a one-mile radius of the Project Site. Childhood asthma can be caused and exacerbated by a large number of environmental exposures, including many indoor sources and allergens. Although outdoor air pollution could be a contributing factor, the air quality analysis discussed in Section 6.3, shows that air quality near the Project Site is improving and current levels

[21] https://www.epa.gov/system/files/documents/2022-11/Lead%20Strategy_1.pdf

are well below health-based standards that are protective of health effects such as asthma, with a margin of safety for protecting vulnerable population groups (e.g., children). Furthermore, any Project-related impacts will not contribute to an exceedance of these health-based standards. The low-birth-weight health indicator also met the criteria, but there is little data to suggest that air quality is associated with this health outcome. However, air quality below the current health-based standards will be protective with regards to this health outcome as well.

Overall, the Proposed Action is not expected to have disproportionate, adverse impacts on public health and on children's environmental health and safety, particularly nearby schools or camps listed in section 5.16.3. The FAA has not established a significance threshold for Children's Environmental Health and Safety Risks. Factors to consider include whether the action would have the potential to lead to a disproportionate health or safety risk to children. Overall, the Proposed Action is not expected to have disproportionate, adverse impacts on public health and on children's environmental health and safety, particularly nearby schools or camps as described in section 5.16.3

6.13 Hazardous Materials, Solid Waste, and Pollution Prevention (MEPA/NEPA)

As discussed in Chapter 5.0, a total of 64 Sites with documented releases of OHM to soil and/or groundwater were identified on or adjacent to the Airport property. The locations of the Sites were compared to proposed improvements for the Airport. Based on this comparison, 13 of the 64 Sites may result in environmental consequences as follows:

- Taxiway B: Five Sites are located in or adjacent to this project area.
- Taxiway D: One Site is located in or adjacent to this project area.
- Runway 15: No Sites were identified in this project area.
- Runway 33: Two Sites were located in or adjacent to this project area.
- Aviation Development Area near Taxiway A: Two Sites are located in or adjacent to this project area.
- Aviation Development Area near Taxiway B: One Site is located in or adjacent to this project area.
- Proposed Electric Aircraft Charging Areas: Two Sites are located in or adjacent to this project area.

It is anticipated that each project area will be evaluated independently, and as required, work will be performed in accordance with either the Preliminary or Comprehensive Response Actions of the MCP (310 CMR 40.0000).

A summary of Sites in relation to proposed or potential Airport improvements are discussed below. The proposed work areas and Sites are on **Figure 6.13-1**.

6.13.1 No-Build Alternative

The No-Build Alternatives would not result in any new construction; therefore, there would be no new solid waste generation, disturbance of soil/groundwater or need for disposal of hazardous materials. Active Massachusetts Contingency Plan (MCP) disposal sites would continue to be assessed and remediated to achieve regulatory closure under the No-Build Alternatives.

PROPOSED AIRPORT ACCESS ROAD

PROPOSED 895' RUNWAY EXTENSION

PROPOSED 695' DISPLACED THRESHOLD

RTN 4-1081

RTN 4-23484

RTN 4-823

RTN 4-26225

PROPOSED ELECTRIC VEHICLE CHARGING AREA

RTN 4-14860

RTN 4-14472

RTN 4-26

RTN 4-26179

RTN 4-28577

RTN 4-29807

RTN 4-21315

RTN 4-28769

RTN 4-26347

Barnstable Municipal Airport

Mary Dunn Pond

Mill Pond Marshes

RUNWAY 15

RUNWAY 15-33

RUNWAY 6-24

RUNWAY 6

RUNWAY 33

RUNWAY 24

TAXIWAY A

TAXIWAY B

TAXIWAY C

TAXIWAY D

TAXIWAY E

NORTH RAMP

EAST RAMP

Flint Rock Rd

Mary Dunn Rd

Airport Way

Barnstable Rd

Iyannough Rd

Attucks Ln

Independence Dr

Jarvis Way

Higgins Crowell Rd

Hawes Run

Jefferson Ave

Gill Ave

Washington Ave

Lincoln Ave

Coolidge Rd

Adams Rd

Camp St

Rosary Ln

Yarmouth Rd

Old Yarmouth Rd

Bodjack Rd

Joaquim Rd

Fenderson Rd

Estella Rd

Oakwood Ave

Pondview Ave

Millpond Rd

Town Brook Rd

Route 28

Southwind Plaza

Capetown Plaza

Barnstable Municipal Airport

Walton Ave

Compass Circle

Walnut St

Spruce St

Mulberry St

Maple St

Linden St

Elm St

Oak St

Grove St

Kings Way

Spring St

Ridgewood Ave

Barnstable Rd

Baxter Rd

Hinckley Rd

Fisher Rd

Enterprise Rd

Pinereedle Ln

Bearse's Way

Schooner Ln

Castlewood Circle

Attucks Ln

Breeds Hill Rd

Hallett Rd

Gill Ave

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LEGEND:

- PROJECT AREA
- APPROXIMATE MASSDEP DISPOSAL SITE BOUNDARIES WITHIN OR IMMEDIATELY ADJACENT TO PROPOSED IMPROVEMENTS (DASHED WHERE ESTIMATED)
- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- PAVEMENT TO BE REMOVED
- PROPOSED ELECTRICAL AIRCRAFT CHARGING AREA
- PROPOSED BUILDING
- POTENTIAL AVIATION DEVELOPMENT AREA
- PROPOSED EASEMENT/FEE ACQUISITION AREA

NOTES:

1. FEATURES ARE APPROXIMATE.
2. RTN = RELEASE TRACKING NUMBER.

SOURCE:

1. PROJECT AREA DIGITIZED FROM ENVIRONMENTAL NOTIFICATION FORM, CAPE COD GATEWAY AIRPORT, EPSILON ASSOCIATES, INC., NOVEMBER 30, 2022.

0 1000 2000

SCALE, FEET

Draft Environmental Impact Report
Cape Cod Gateway Airport
Hyannis, Massachusetts

Epsilon Associates, Inc.
Manyard, Massachusetts

GEI Consultants

Project 2203788

APPROXIMATE DISPOSAL SITE BOUNDARIES AT PROPOSED CONSTRUCTION AREAS

October 2023 **Figure 6.13-1**

6.13.2 Taxiway D

The current Taxiway D is located on the northwest side of the airport adjacent to runway 15-33 (Fig. 4). The goal of the project is to reconfigure the taxiway as a partial-length, parallel, taxiway with a 400-foot standard separation from Taxiway B to Taxiway A1. Approximately 60,000 cubic yards of soil will be excavated for this work. The project will also include the following excavation areas:

- Constructing a run-up area along the north side of the new partial parallel Taxiway D.
- Removing Taxiway D between Taxiway A and the new partial parallel Taxiway D.
- Removing Taxiway D between Taxiway B and Runway 6-24.
- Installation of new stormwater utilities and structures.

Based on the review of existing conditions presented in Chapter 5.0, one release of OHM tracked under RTN 4-28577 was identified in the proposed Taxiway D improvement area. RTN 4-28577 is associated with the presence of PAHs and lead in soil and sediments above the MassDEP Sediment Screening Criteria at Upper Gate and Lewis Ponds. A summary of existing conditions is presented in Chapter 5.0.

Since the proposed work is being performed within a portion of this open Site, soil, sediment, groundwater, and surface water will be managed in accordance with requirements of the MCP. Pending the project sequencing, the work will be performed under the Preliminary Response Action or Comprehensive Response Action provisions of the MCP, as applicable.

At this time, it is anticipated that excess soil or sediment will either be reused on-site during construction, stockpiled in accordance with the MCP for future reuse, or transported offsite for reuse, recycling, or disposal. Groundwater and surface water will either be treated and discharged to surface water in accordance with requirements of the NPDES DRGP, recharged in accordance with local, state, and federal regulations, or collected and transported offsite for disposal.

6.13.3 Taxiway B Relocation

The existing Taxiway B is located on the southeast side of the airport adjacent to runway 6-24 (Fig. 4). The goal of the proposed improvements to Taxiway B is to remove the existing taxiway and move/extend it to a standard, 400-foot, separation south of Runway 6-24. Approximately 11,000 cubic yards of soil will be excavated for this work. This project will also include:

- Constructing two midfield taxiways to Runway 6-24.
- Constructing a northern taxiway spanning Runway 6-24 to Taxiway C.
- Installation of new stormwater utilities and structures.

Based on the review of existing conditions presented in Chapter 5.0, the following five releases of OHM were identified in or adjacent to the proposed Taxiway B Improvement area:

- **RTN 4-26347:** This RTN is associated with historical releases of PFAS and 1,4-dioxane to soil and groundwater at the airport. Response actions to address these releases are ongoing.

- **RTN 4-28769:** This RTN is associated with the sudden release of approximately 16 gallons of aviation fuel and 3 gallons of motor oil to an unpaved area from an aircraft accident in April 2021. Following response actions, the site achieved regulatory closure with a PSNC.
- **RTN 4-29807:** This RTN is associated with the release of over 10 gallons of hydraulic fluid onto soil from a hydraulic hose on a dump truck. Following response actions, the site achieved regulatory closure with a PSNC.
- **RTN 4-21315:** This RTN is associated with the release of approximately 160 gallons of aviation jet fuel that occurred during an aircraft transportation accident. Following response actions, the site achieved regulatory closure with a Class A-2 RAO.
- **RTN 4-14472:** This RTN is associated with the sudden release of 10-20 gallons of aviation jet fuel when an aircraft inadvertently steered off the runway resulting in the rupture of the plane's fuel tank. Following response actions, the site achieved regulatory closure with a Class A-2 RAO.

Contaminants of concern (COCs) that may be encountered during construction of the proposed improvements for Taxiway B include PFAS and residual petroleum compounds in soil, and PFAS and 1,4-dioxane in groundwater.

An additional release tracked under RTN 4-26179 is also estimated to be within the Taxiway B Improvement area. This RTN is associated with historic releases of PFAS from the Barnstable County Fire Training Academy, resulting in impacted groundwater 32 feet to 70 feet below ground surface. Due to the depth of groundwater impacts, it is unlikely that the proposed work will encounter groundwater conditions at these depths, and therefore, releases of PFAS from the Barnstable Fire Training were not included as a site of concern for this area. A summary of existing conditions is presented in Chapter 5.0.

Since the proposed work is being performed in portions of an open MassDEP Disposal Site (e.g., RTN 4-26347) and there is potential for encountering residual contamination from closed releases, soil and groundwater will be managed in accordance with requirements of the MCP. Pending the project sequencing, the work will be performed under the Preliminary Response Action or Comprehensive Response Action provisions of the MCP, as applicable.

MCP submittals will include the following:

- Plans, as necessary, to sample and analyze asphalt and soil beneath Taxiway B during airport upgrades for the presence of PFAS.
- Descriptions of how the PFAS-containing asphalt and soil, if identified, will be managed, and whether the findings impact the remediation options being performed under RTN 4-26347.
- During this effort, the Airport will maintain the existing monitoring wells to the extent feasible. Wells that cannot be maintained due to their location with respect to improvement effort will be decommissioned in accordance with MassDEP requirements and replaced, if necessary.

- At this time, it is anticipated that soil will either be reused on-site during construction, stockpiled in accordance with the MCP for future reuse, or transported offsite for reuse, recycling, or disposal. While it is not expected that significant groundwater management will be encountered as part of this project, if groundwater is encountered it will either be recharged in accordance with local, state, and federal regulations, treated and discharged to surface water in accordance with requirements of the National Pollution Discharge Elimination System Dewatering and Remedial General Permit (NPDES DRGP), or collected and transported offsite for disposal.

6.13.4 Runway 15 and Taxiway A Extension

The current Runway 15 is located on the northwest end of the airport (**Figure 1.1-1**). The goal of the project is to extend the runway approximately 895 feet, which includes an approximately 695-foot displaced threshold. Approximately 60,000 cubic yards of soil will be excavated for this work. The project will also include installation of new stormwater utilities and structures.

Based on the review of existing conditions presented in Chapter 5.0, no releases of OHM were identified in or adjacent of proposed improvements to Runway 15. However, due to atmospheric deposition, background concentrations of PFAS may be present in surficial soils. Since there is potential for encountering background levels of PFAS in shallow soil, soil will be managed in accordance with requirements of the MCP. Pending the project sequencing, the work will be performed under the Preliminary Response Action or Comprehensive Response Action provisions of the MCP, as applicable.

At this time, it is anticipated that soil will either be reused on-site during construction, stockpiled in accordance with the MCP for future reuse, or transported offsite for reuse, recycling, or disposal. While it is not expected that groundwater will be encountered as part of this project, if groundwater is encountered it will either be recharged in accordance with local, state, and federal regulations, treated and discharged to surface water in accordance with requirements of the NPDES DRGP, or collected and transported offsite for disposal.

6.13.5 North Ramp Aviation Development Area

The existing North Ramp is located on the western side of the airport adjacent to Taxiway A and Runway 15-33 (**Figure 1.1-1**.). The goal of the potential work at the North Ramp Aviation Development Area is general aviation improvements for apron and/or hanger development. The proposed construction encompasses approximately 8.7 acres.

Based on the review of existing conditions presented in Chapter 5.0, the following two releases of OHM were identified in or adjacent to potential improvements to the Aviation Development Area at Taxiway A:

- **RTN 4-1081:** This RTN is associated with historical releases of OHM resulting from the site's former use as an auto salvage facility. Following response actions, the site achieved regulatory closure with a Class A-2 RAO.

- **RTN 4-23484:** This RTN is associated with a release of approximately 15 gallons of aviation fuel to the paved tarmac during overfilling of on airplane in August 2011. Following response actions, the Site achieved regulatory closure with a Class A-1 RAO.

Contaminants of concern associated with these Sites include petroleum compounds and lead in soil, and petroleum compounds in groundwater.

Since there is a potential for encountering residual contamination from closed releases (e.g., RTN 4-1081), soil and groundwater will be managed in accordance with requirements of the MCP. Pending the project sequencing, the work will be performed under the Preliminary Response Action or Comprehensive Response Action provisions of the MCP, as applicable.

As discussed in Section 5.17.3, the 1991 drill location, located near the north end of Taxiway A, had documented use of AFFF. When development begins for Taxiway A, MCP submittals will include a plan to sample and test disturbed soil in areas not previously sampled for PFAS. Further, this submittal will describe how PFAS-containing soils will be managed, if identified.

At this time, it is anticipated that soil will either be reused on-site during construction, stockpiled in accordance with the MCP for future reuse, or transported offsite for reuse, recycling, or disposal. While it is not expected that significant groundwater management will be encountered as part of this project, if groundwater is encountered it will either be recharged in accordance with local, state, and federal regulations, treated and discharged to surface water in accordance with requirements of the NPDES DRGP, or collected and transported offsite for disposal.

6.13.6 East Ramp General Aviation Development

The existing East Ramp is located on the southeast side of the airport, adjacent to Taxiway B and Runway 6-24 (**Figure 1.1-1**). The proposed available space for new aviation development encompasses approximately 31.3 acres within the East Ramp, inclusive of space made available via the re-alignment of Taxiway B.

Based on the review of existing conditions presented in Section 5.17, one release of OHM tracked under RTN 4-26347 was identified in the potential East Ramp Aviation Development Area for Taxiway B. As discussed above, this RTN is associated with historical releases of PFAS and 1,4-dioxane to soil and groundwater. Response actions to address these releases are ongoing.

An additional release tracked under RTN 4-26179 is also estimated to be within the potential East Ramp Aviation Development Area. As previously discussed, this RTN is associated with historic releases of PFAS from the Barnstable County Fire Training Academy, resulting in impacted groundwater 32 feet to 70 feet below ground surface. Due to the depth of groundwater impacts, it is unlikely that the proposed work will encounter groundwater conditions at these depths. Therefore, releases of PFAS from the Barnstable Fire Training were not included as a site of concern for this area. A summary of existing conditions is presented in Section 5.17.

Since the proposed work is being performed in portions of an open MassDEP Disposal Site (e.g., RTN 4-26347) and there is potential for encountering residual contamination from closed releases, soil and groundwater will be managed in accordance with requirements of the MCP. Pending the project sequencing, the work will be performed under the Preliminary Response Action or Comprehensive Response Action provisions of the MCP, as applicable.

This area coincides with the asphalt caps located at the ARFF area and the Deployment area. As discussed in Section 5.17.3, these caps were installed to mitigate the leaching of PFAS from the soil to the groundwater. MCP submittals will describe how the caps' integrity will be maintained during and after construction. Any asphalt removed from the taxiway, including the capped area, will be sampled, and analyzed for PFAS and managed appropriately if PFAS is detected.

During this effort, the Airport will maintain the existing monitoring wells to the extent feasible. Wells that cannot be maintained due to their location with respect to improvement effort will be decommissioned in accordance with MassDEP requirements and replaced, if necessary.

At this time, it is anticipated that soil will either be reused on-site during construction, stockpiled in accordance with the MCP for future reuse, or transported offsite for reuse, recycling, or disposal. While it is not expected that significant groundwater management will be encountered as part of this project, if groundwater is encountered it will either be recharged in accordance with local, state, and federal regulations, treated and discharged to surface water in accordance with requirements of the NPDES DRGP, or collected and transported offsite for disposal.

6.13.7 Proposed Electrical Aircraft Charging Area

The goal of this work is to install EV charging spaces and electric aircraft charging stations.

Based on the review of existing conditions presented in Chapter 5.0, the following two releases of OHM were identified in or adjacent to the proposed electrical aircraft charging areas:

- **RTN 4-26225:** This RTN is associated with the release of approximately 30 gallons of aviation fuel to pavement and a catch basin during an aircraft accident in 2016. Following response actions, the site achieved regulatory closure with a PSNC.
- **RTN 4-823:** This RTN is associated with the release of VOCs and petroleum-related compounds to soil and groundwater from historical leaching pits. Three other RTNs (4-11841, 4-12048, and 4-12687) are linked to this RTN. Following response actions, the site achieved regulatory closure with a PSNC.

COCs associated with these Sites include petroleum compounds in soil and groundwater.

Since there is a potential for encountering residual contamination from closed releases (e.g., RTN 4-26225), soil and groundwater will be managed in accordance with the requirements of the MCP. Pending the project sequencing, the work will be performed under the Preliminary Response Action or Comprehensive Response Action provisions of the MCP, as applicable.

At this time, it is anticipated that soil will either be reused on-site during construction, stockpiled in accordance with the MCP for future reuse, or transported offsite for reuse, recycling, or disposal. While it is not expected that significant groundwater management will be encountered as part of this project, if groundwater is encountered it will either be recharged in accordance with local, state, and federal regulations, treated and discharged to surface water in accordance with requirements of the NPDES DRGP, or collected and transported offsite for disposal.

6.13.8 Solid Waste

The selected contractor will apply relevant and practicable procedures to allow for the reuse and recycling of construction materials. Prior to construction, the contractor will develop a Construction Waste Management Plan to ensure that a minimal amount of waste debris is disposed in landfills. For materials that cannot be recycled, solid waste will be transported in covered trucks to an approved solid waste facility per the DEP Regulation for Solid Waste Facilities, 310 CMR 16.00.

6.13.9 Pollution Prevention

It is estimated that up to approximately 200,000 cubic yards of soil may be generated over the course of the various projects being executed. As discussed above several Sites with documented releases of OHM are located within or adjacent to areas of proposed Airport improvements. Based on the location of these Sites, it is anticipated that potentially contaminated soil or groundwater may be encountered during the implementation of the various projects.

Excavation and management of soil contaminated with, or potentially contaminated with, OHM will be conducted in general accordance with Response Action Performance Standards (RAPS) as defined in the MCP (310 CMR 40.0191). RAPS considers testing requirements, disposal options, and construction-period mitigation measures to minimize impacts to public health and the environment associated with the excavation and handling of contaminated soil, at a minimum.

Due the presence of at least background concentrations of PFAS in soil and the limited options for offsite disposal of PFAS-impacted soil of any concentration currently available, the airport will attempt to reuse soil during construction to the extend feasible. If reuse of soil is not possible for a specific project, the excess soil will be stockpiled and managed in accordance with the MCP for future reuse at the airport. If the excess material is not suitable or, ultimately will not be reused at the airport, the excess soil will be transported offsite for reuse, recycling, or disposal, as applicable, and in accordance with local, state, and federal regulations.

If soil is reused during construction, it is anticipated that the soil will be reused in the general proximity of the location of the original excavation. If excess soil is retained for future reuse, it will be placed in an area designated by the Airport for materials management. Soils placed in the Airport materials management area(s) will be covered with polyethylene sheeting to minimize potential fugitive dust or otherwise stabilized. Secondary containment such as berms or siltation fence will be installed, as necessary, to prevent sediment in runoff from leaving the material management area.

6.13.10 Impact Summary

The FAA has not established a significance threshold for Hazardous Materials, Solid Waste, and Pollution Prevention. Based on the information provided in Section 6.13, the Proposed Action does not exceed the considerations, per the FAA Order 1050.1F, as the Project does not have the potential to: Violate applicable Federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management; Involve a contaminated site; Produce an appreciably different quantity or type of hazardous waste; Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or adversely affect human health and the environment.

6.14 Light Emissions and Visual Effects (including Open Space, Scenic Values)

6.14.1 No-Build Alternative

The No-Build Alternatives would not result in any new construction; therefore, there would be no changes in light emissions or visual effects.

6.14.2 Proposed Action

Taxiway D construction and East Ramp construction will have mature tree removal. However, this tree removal is not anticipated to change the view for passing motorists or pedestrians as it is interior to the Airport property and there are not any public streets within the vicinity. The closest roadway to Taxiway D is Airport Road to the north within a heavily vegetated area. The East Ramp abuts Mary Dunn Way, an internal roadway. Between this roadway and the nearest public road are a corridor of trees as well as the railroad tracks. This visual screening will remain.

There would be additional lighting for any new hangars at the East Ramp and extended Runway 15 and Taxiway A. Lighting (primarily lighted signs and taxiway lights) would be relocated for Taxiway B and D. PAPI lights would be located on the north side of Runway 15 by the new extension, a significant distance from any roadway. Any new lighting would mostly be toward the interior of airport property; would be consistent in character with existing lighting; and are not likely to noticeably alter views from off airport property.

No other Projects are expected to affect local scenic or aesthetic qualities during the construction period.

6.14.3 Construction Impacts

Any visual impacts from the presence of construction vehicles and equipment would be temporary. Only discrete portions of the airport closest to the various Project areas are visible from the roadway.

6.14.4 Impact Summary

The Proposed Action does not exceed the considerations as per the FAA Order 1050.1F, and does not have the potential to: Create annoyance or interfere with normal activities from light emissions; Affect the visual character of the area due to the light emissions; Affect the nature of the visual character of the area; or Block or obstruct the views of visual resources, including whether these resources would still be viewable from other locations

6.15 Cumulative Impacts

The proposed project is not expected to result in any negative or long-term significant indirect or cumulative impacts.

Indirect Effects

Under NEPA, "indirect effects" are those "caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable." Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems 40 CFR Part 1501(40 CFR 1508.8).

The proposed projects are not expected to cause any significant indirect impacts in any of the impact categories considered in this EA/EIR. All impacts are expected to occur only at the specific locations where construction will occur. The potential for indirect impacts occurring later on or distant from the site due to on-going operations will be minimized by mitigation measures, such as wetland restoration/replication, stormwater management, carbon emission mitigation, and use of sustainable energy sources. The project will not create any significant secondary air quality impacts as it is not expected to significantly affect the amount of air traffic.

Cumulative Effects

Cumulative effects are defined as "effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time."[22] Therefore, this evaluation considered those effects that are "reasonably foreseeable" and within the geographic area of concern for this analysis, which is generally the Airport and its immediate vicinity, i.e., the land adjacent to the Airport.

[22] CEQ regulations at 40 CFR § 1508.1(g) (revised April 20, 2022)

Table 6.15-1 below presents the Airport projects overtime since the first MEPA filing. This section considers recent Airport projects, those included in the Airport's 2022 Master Plan Update, and other past, present, and reasonably foreseeable future projects located within the project vicinity. Past projects include reasonably foreseeable projects include miscellaneous projects anticipated to occur on and around the Airport property within the next five years.

Potential future development, from a cumulative standpoint, is consistent with The Town of Barnstable's Comprehensive Plan (2010) to promote positive economic change and to support the prioritization of building and maintaining appropriate infrastructure. The plan is also intended to promote sustainable development and encourage the growth of new economic sectors. The proposed Projects will have a cumulative effect of supporting these economic development goals identified in the Plan by maintaining the facilities at the Airport, responding to the Airport's current and future aviation needs, and positioning the Airport to meet future aviation industry shifts (integration of electric aircraft).

6.15.1 Past Projects

Past Projects

The Airport has, since its inception in 1928 as a single grass runway, continuously improved and maintained its assets in an economically responsible manner consistent with its purpose and in collaboration as a part of the Massachusetts Airport System. Today, the airport consists of a 35,000 sq. ft. passenger terminal, 85 ft. air traffic control tower, extensive parking facilities, aircraft ramps, taxiways, an airport rescue firefighting team, maintenance building and an aircraft fuel farm. More than 40 private tenants lease hangar space on parts of the airport property.

Since MEPA was enacted, the following projects have been undertaken at the Airport:

Table 6.15-1 Past Projects and MEPA Submissions

EEA No.	Year	Projects
14642	2012	Master Plan Improvements: up to 210,000 sf of additional corporate and general aviation hangars on the East and North Ramp; and leasing of the former Mildred's Restaurant site
12267	2010	New terminal building, air traffic control tower (ATCT), access roads, apron areas, parking areas, and various airfield improvements.
10078	1994	Rescue fire and snow removal building
9206	1992	Airport 5-Year Capital Plan improvements
8017	1982	Rehabilitate and strengthen Runway 6-24
4480	1982	Runway 15-33 Extension
4247	1981	Land Acquisition of multiple sites adjacent to the airport
2522	1977	Pave Auto Parking
2315	1976	Construct Six T-Hangars

6.15.2 Current Projects (2023 through 2029)

Runway 06-24/EMAS Reconstruction: The airport is currently undertaking a $25 million project to reconstruct Runway 06-24 and replace the Engineered Materials Arresting System (EMAS). The project improves safety and usability at the airport facility for both passengers and airport personnel. The reconstructed Runway 06-24 is expected to extend the design life of the pavement for 20-30 years and improve safety and operational flows.

Reconstruction includes in-pavement and edge lighting, regarding turf safety areas, and miscellaneous related airfield improvements to navigational aids and power sources. The EMAS, located at the approach end of Runway 06-24, is comprised of high-energy absorbing materials which reliably and predictably deform under the weight of an aircraft. The construction is scheduled to be completed in late 2023. This project is considered a maintenance project, conducted within the footprint of the previous surfaces, and therefore is not subject to NEPA/MEPA review.

Micro/Smart Grid: The airport is planning a Micro/Smart Grid, via a $1.95 million SMART grant received by MassDOT Aeronautics Division, to provide robust infrastructure for the electrification of ground vehicles and aircraft. Power from the smart grid will facilitate the charging of electric ground vehicles, including buses, and in the future, electric aircraft. In collaboration with the airport and the Cape Cod Regional Transit Authority, the initiative aims to increase clean energy independence while helping to support the disadvantaged community living near the airport in Hyannis. Construction is anticipated to occur in 2025-2026.

6.15.3 Future Projects (2030-2040)

Terminal Building Improvements: The Proposed Action will renovate the terminal building and expand it by up to 5,000 sf to current Airport needs and standards, including Transportation Security Administration (TSA) requirements (TSA's Recommended Security Guidelines for Airport Planning, Design, and Construction). The current terminal building capacity is insufficient to meet current needs and future demand. The current terminal building has existing deficiencies which include check-in space; inbound/outbound baggage screening; passenger holdroom; and terminal support space. To meet the potential future needs of 200 peak hour passengers, an expansion of up to 20,000 sf for a total terminal space of 55,000 sf is required. Future terminal building improvements, based on demand, of up to 25,000 sf to meet anticipated Airport needs and standards, including Transportation Security Administration (TSA) requirements[23].

Furthermore, the Airport has committed to meet the provisions of the 2023 Stretch Code update, even though Barnstable is not a Stretch Code community. The 2023 Stretch Code includes energy efficiency strategies that provide a pathway to meet 2050 decarbonization goals. These commitments include, for any new buildings, expansions, or additions:

- High performing envelopes that comply with the 2023 Stretch code envelope performance requirements;

[23] 49 CFR Part 1544 – Aircraft Operator Security: Air Carriers and Commercial Operators

- 100% heat pump space heating;
- Energy recovery ventilation per the 2023 Stretch code update;
- PV-ready roofs.

Runway 6-24 Runway Safety Area EMAS: The Runway 24 end currently has a non-standard Runway Safety Area (RSA) that does not fully meet the FAA standard sizing of 800 feet by 1,000 feet per FAA AC 150/5300-13B. Per FAA Order 5200.8, *Runway Safety Area Program*, construction of a 200-foot by 400-foot engineered material arresting system (EMAS) on the approach end of Runway 24 is proposed to correct the non-standard RSA and enhance safety for aircraft landing on Runway 6. An EMAS is built at the end of a runway to reduce the severity of the consequences of a runway overrun and is equivalent to a full-dimension RSA.

Self-fueling Fuel Tanks: The Airport currently offers both Jet-A and 100LL Avgas fuel. All fuel is provided via full-service fuel trucks. The existing fuel farm has space for an additional 20,000-gallon Jet-A fuel tank to be constructed as demand arises. The Airport will add a self-fueling option for 100LL Avgas. A card reader would be installed to provide a 100LL self-fueling option. Should these additional tanks be installed, a supplemental air emissions analysis will be completed prior to installation to assess air quality impacts**.**

Non-Aeronautical Development Areas: The Master Plan designates existing Airport-owned land for non-aeronautical development. Airport currently has nine land leases on Airport property that are used for non-aviation purposes. These land leases generate additional revenue for the Airport outside of those leases inside the terminal or leases used for aeronautical purposes. There are additional vacant lease spaces that may be developed at some point in the future should demand arise. Any buildings or structures would be required to meet the same commitments to the 2023 Stretch Code as listed above under Terminal Improvements. Should any MEPA thresholds be exceeded for the planned development of these areas, MEPA review will be initiated at that time.

Chapter 7.0

Mitigation & Draft Section 61 Findings

7.0 MITIGATION AND DRAFT SECTION 61 FINDINGS

This Chapter provides a summary of proposed mitigation and Proposed Section 61 Findings for the Project. In addition, it describes measures to which the Proponent has committed to mitigate potential impacts on wetlands, air quality and greenhouse gas emissions, noise, and stormwater quality or quantity, as well as construction period mitigation measures.

7.1 Introduction

M.G.L.c.30, s.61 requires that "[a]ll authorities of the Commonwealth … review, evaluate, and determine the impact on the natural environment of all works, projects or activities conducted by them and … use all practicable means and measures to minimize [their] damage to the environment. … Any determination made by an agency of the Commonwealth shall include a finding describing the environmental impact, if any, of the project and a finding that all feasible measures have been taken to avoid or minimize said impact." Each state agency that issues a permit for the Project shall issue a Section 61 Finding in connection with permit issuance, identifying mitigation that is relied upon to satisfy the Section 61 requirement. A proposed Section 61 Finding is provided in Section 7.3, and a table of mitigation measures is included as part of Section 61 Findings. All mitigation will be the responsibility of the Proponent.

7.2 Anticipated State Permits and Approvals

Table 7.2-1 identifies the state Agencies that are expected to take Agency Action on the Project and, therefore, issue Section 61 Findings. It also identifies the Agency Actions anticipated to be required.

Table 7.2-1 State Agency Actions Required for the Project

Permit/Review	Agency	Status and Relevant Project(s)
Individual 401 Water Quality Certificate	Department of Environmental Protection (MassDEP)	WQC to be filed Date TBD for Taxiway D during Phase II
Wetlands Protection Act M.G.L. c. 131 § 40	MassDEP	Notice of Intent To be filed Date TBD for Taxiway D during Phase II
M.G.L. c. 90 § 35B, 780 CMR 111.7	Massachusetts Department of Transportation (MassDOT) – Aeronautics Division	Conceptual design complete. Final construction design to be completed in CIP phase.
Review under Massachusetts Endangered Species Act	Natural Heritage and Endangered Species Program	No impacts anticipated. MESA Checklist filed TBD if necessary.

7.3 Draft Section 61 Findings

Project Name:	Cape Cod Gateway Airport Master Plan Projects
Project Location	Barnstable, MA
Project Proponent	Cape Cod Gateway Airport
EEA Number	16640
Date Noticed in Monitor	December 7, 2022

The potential environmental impacts of the Project have been characterized and quantified in the ENF dated November 30, 2022 and this Draft EIR/EA, which are incorporated by reference into this Section 61 Finding. Throughout the planning and environmental review process, the Proponent has been working to develop measures to mitigate significant impacts of the Project. With the mitigation proposed and carried out in cooperation with state agencies, [AGENCY] finds that there are no significant unmitigated impacts.

The Proponent recognizes that the identification of effective mitigation, and implementation of that mitigation throughout the life of the Project, is central to its responsibilities under the Massachusetts Environmental Policy Act (MEPA). The Proponent has accordingly prepared the annexed Table of Impacts and Mitigation Measures that specifies the mitigation that the Proponent will provide.

Now, therefore, [AGENCY], having reviewed the MEPA filings for the Project, including the mitigation measures itemized on the annexed Table of Impacts and Mitigation Measures, finds pursuant to M.G.L. C. 30, S. 61, that with the implementation of the aforesaid measures, all practicable and feasible means and measures will have been taken to avoid or minimize potential damage from the Project to the environment.

_____

[Agency]

_____

By

_____

[Date]

Table 7.3-1 describes the measures to be implemented to mitigate the effects of the Project related to the required state actions and the schedule for implementation. **Table 7.3-2** identifies construction period mitigation measures. The Proponent will be responsible for all mitigation measures.

Table 7.3-1 Summary of Mitigation Measures

Mitigation Measures	Schedule	Cost
Water Resources		
♦ Use of a 2:1 side slope to construct Taxiway D to minimize impacts to wetland and water resource areas associated with Upper Gate Pond ♦ Construction of an approximately 4,500 sf BVW replication area for mitigation compliance for MassDEP ♦ Full compliance with Massachusetts Stormwater Management Standards for impervious surface addition of xx acres ♦ Utilization of revised rainfall intensities by NOAA Atlas 14, Point Precipitation Frequency Estimates including for future climate conditions. ♦ Stormwater Best Management Practices to be incorporated into design include: o Infiltration chambers or leaching basins with pre-treatment o Vegetative strips o Oil/Water separators ♦ Updates to Airport's MSGP SWPPP and SPCC plans, as necessary. ♦ Groundwater monitoring to track PFAS plume at Airport. ♦ Construction period stormwater management best practices	During and post construction.	Included in the overall Project cost
Wetland resource areas will be protected from direct impacts, including erosion and sedimentation, during construction. ♦ EPA NPDES Construction General Permit will be obtained for each project and a construction period SWPPP will be developed and implemented. ♦ Work in the water of Upper Gate Pond will require the use of a coffer dam in two discrete areas. Water within the work zone encompassed by the coffer dam will need to be pumped out. This area will be pumped into straw bale basins or filter bags. The basins will consist of a ring of staked straw bales overlain by non-woven geotextile filter fabric and crushed stone. Discharge water will be pumped into the basin and allowed to drain through the fabric onto relatively-flat stabilized surfaces. ♦ Dewatering structures will be placed as far away from vegetated wetland resources as possible.	During operation	Included in the overall Project cost

Table 7.3-1 Summary of Mitigation Measures (Continued)

Mitigation Measures	Schedule	Cost
Water Resources		
♦ No fueling or lubrication of equipment will be performed within 100 feet of vegetated wetlands, streams, or vernal pools. A spill kit will be kept on site by the site contractor.		
Climate and Greenhouse Gas Emissions		
♦ New or renovated buildings will meet 2023 Stretch Energy Code measures including: o High performing envelope that complies with the 2023 Stretch code envelope performance requirements; o 100% heat pump space heating; o Energy recovery ventilation per the 2023 Stretch code update; ♦ Electric domestic hot water heating, specific method to be determined. Heat pump domestic hot water heating to be analyzed; ♦ Roof to be constructed PV-ready; ♦ Installation of electric vehicle (EV) charging spaces, quantity to be determined; ♦ EV infrastructure for additional future EV-parking spaces to be installed, quantity to be determined. ♦ 110 acres of dense forest exists north of Upper Gate Pond and Lewis Pond, Airport's forests land within this area results in 92.40 MT/C/Year in carbon sequestration.	Design and post construction	Included in the overall Project cost
Natural Resources		
♦ Recycling of asphalt for new taxiway and runway surfaces ♦ Stockpiling of excess aggregate from grading and excavation activities for use as fill material ♦ Commitment to development of a microgrid for renewable energy and storage technology ♦ Terminal improvements have committed to the current stretch code building requirements for energy efficiency and decarbonization (described above)	Ongoing, During and post-construction	Included in the overall Project cost

Table 7.3-2 Summary of Construction Period Mitigation Commitments (Continued)

Mitigation Measures	Schedule	Cost
Noise		
♦ Installation of noise barrier along the runup pad for the relocated Taxiway D adjacent to the existing runup pit ♦ Continued implementation and evaluation of voluntary noise abatement flight procedures for visual flight rules ♦ Voluntary quiet hours between 10 p.m. and 6 a.m. ♦ Voluntary avoidance of touch and go nighttime operations	Ongoing, During and post-construction	Included in the overall Project cost
♦ Multiple noise complaint reporting mechanisms including in person, over the phone or online https://flyhya.com/pilot-info/noise-abatement/) ♦ Consultation with FAA and primary Airport air taxi operators such as Cape Air on flight path and approach angle modifications for take-offs and landings that may serve to minimize noise impacts.		
Every reasonable effort will be made to minimize the noise impacts of from construction activities, including: ♦ Limiting construction to weekdays between 7 AM and 5 PM; ♦ Using appropriate mufflers on all equipment and ongoing maintenance of intake and exhaust mufflers; ♦ Muffling enclosures on continuously running equipment, such as air compressors and welding generators; ♦ Replacing specific construction operations and techniques by less noisy ones where feasible; ♦ Selecting the quietest of alternative items of equipment where feasible; ♦ Scheduling equipment operations to keep average noise levels low, to synchronize the noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels; ♦ Turning off idling equipment; and ♦ Locating noisy equipment at locations that protect sensitive locations by shielding or distance.		

Table 7.3-2 Summary of Construction Period Mitigation Commitments (Continued)

Mitigation Measures	Schedule	Cost
Biological Resources		
♦ Necessary tree removal of 8.65 acres will be accomplished during time periods appropriate for minimizing impacts to any potential bat populations outside of the summer roosting period (April through September), and optimally during the winter months (October 1 through March 31 when possible). ♦ No work will occur within NHESP mapped habitat and there will be no impacts to state-listed species. ♦ Wildlife habitat features to be incorporated into wetland replication area	Ongoing, During and post-construction	Included in the overall Project cost
Hazardous Materials		
♦ Soil, sediment, groundwater, and surface water will be managed in accordance with the requirements of the MCP. Pending the project sequencing, the work will be performed under the Preliminary Response Action or Comprehensive Response Action provisions of the MCP, as applicable. ♦ At this time, it is anticipated that excess soil or sediment will either be reused on-site during construction, stockpiled in accordance with the MCP for future reuse, or transported offsite for reuse, recycling, or disposal in accordance with all local, state, and federal regulations. ♦ If soil is reused during construction, it is anticipated that the soil will be reused in the general proximity of the location of the original excavation. If excess soil is retained for future reuse, it will be placed in an area designated by the Airport for materials management. Soil placed in the Airport materials management area(s) will be covered with polyethylene sheeting to minimize potential fugitive dust or otherwise stabilized. Secondary containment such as berms or hay bales will be installed, as necessary, to prevent sediment in runoff from leaving the material management area. ♦ Groundwater and surface water will either be treated and discharged to surface water in accordance with requirements of the NPDES DRGP, recharged in accordance with local, state, and federal regulations, or collected and transported offsite for disposal. ♦ Existing PFAS disposal site caps will not be altered or impacted.	Ongoing, During and post-construction	Included in the overall Project cost

Table 7.3-2 Summary of Construction Period Mitigation Commitments (Continued)

Mitigation Measures	Schedule	Cost
Hazardous Materials		
♦ Excavation and management of soil contaminated with, or potentially contaminated with, OHM will be conducted in general accordance with Response Action Performance Standards (RAPS) as defined in the MCP (310 CMR 40.0191). ♦ Construction projects to be completed in accordance with requirements of Massachusetts Contingency Plan provisions for the various response actions across the Airport ♦ Groundwater and surface water will either be treated and discharged to surface water in accordance with requirements of the NPDES DRGP, recharged in accordance with local, state, and federal regulations, or collected and transported offsite for disposal. ♦ excess soil or sediment will either be reused on-site during construction, stockpiled in accordance with the MCP for future reuse, or transported offsite for reuse, recycling, or disposal.		
Air Quality		
Measures to mitigate construction-related air quality impacts will include: ♦ Using wetting agents on areas of exposed soil on a scheduled basis; ♦ Using covered trucks; ♦ Minimizing spills on the construction site; ♦ Monitoring actual construction practices to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized; ♦ Minimizing storage of debris on the Project site; ♦ Periodic street and sidewalk cleaning with water to minimize dust accumulations; and ♦ The contractor will comply with the National Emission Standards for Hazardous Pollutants (NESHAP) throughout demolition and construction activities. ♦ Using equipment retrofitted with diesel emissions control devices. The Proponent will specify during the procurement of the subcontractors, that the majority of the heavy equipment operating on the Project site be retrofitted with diesel emissions control devices;	During construction.	Included in the overall Project cost

Table 7.3-2 Summary of Construction Period Mitigation Commitments (Continued)

Mitigation Measures	Schedule	Cost
Air Quality		
♦ Maintaining an "idle free" work zone of fossil fuel trucks and equipment by providing supplemental hoisting and pumping equipment along with "just-in-time" delivery methods. On-site idling will be limited to five minutes. "Do Not Idle" signs will be posted at appropriate locations; ♦ By locating combustion engines away from sensitive receptors such as fresh air intakes, air conditioners and windows; and ♦ Using Ultra Low Sulfur Diesel for all trucks and construction machinery as required by the US EPA.		
Stormwater Management		
For construction period stormwater management: ♦ Each project disturbing greater than 1 acre will develop a Stormwater Pollution Prevention Plan (SWPPP) that complies with the EPA construction general permit for stormwater discharges will be developed. ♦ Construction will be planned so that disturbed areas are minimized to the extent feasible ♦ Sedimentation and erosion controls will be incorporated into design and construction practices.	Before and during construction	Included in the overall Project cost
Historical, Archeological, and Cultural Resources		
♦ Protection of archeological sites during construction will include: ♦ Construction personnel briefing; ♦ High visibility fencing with No Trespassing signs around the sensitive cultural resource areas to be protected. ♦ Pre-and post-construction inspections.	Before and during construction	Included in the overall Project cost
Traffic and Transportation		
Construction period traffic will be managed to minimize off-airport impacts including the following: ♦ The Proponent will coordinate with the Town of Barnstable to discuss transportation-related construction-period impacts; ♦ Designated truck routes will be established to govern how trucks access the Project sites;	Before and during construction	Included in the overall Project cost

Table 7.3-2 Summary of Construction Period Mitigation Commitments (Continued)

Mitigation Measures	Schedule	Cost
Traffic and Transportation		
♦ Police detail officers will be used as necessary and as required by the towns to facilitate and maintain safe and efficient passage of vehicles and pedestrians during construction; ♦ Prior to the start of construction, the general contractor will submit a Construction Period Traffic Management Plan to the Town. The plan will identify designated construction truck routes and any temporary roadway improvements necessary to accommodate truck traffic, while maintaining safe and efficient passage for vehicles, pedestrians, and bicyclists; ♦ The Proponent will avoid full or partial street closures to the extent possible. Should a partial street closure be necessary to accommodate materials transport or construction-related activities, the closure will be limited to off-peak hours; and		
♦ Parking for construction workers will be provided within the Project site, and workers will be prohibited from parking along adjacent roadways.	Before and during construction	Included in the overall Project cost
♦ Evaluation of traffic demand management opportunities ♦ Electric Vehicle charging stations and providing electrical conduit for future EV stations	Post construction.	Included in the overall Project cost
EJ & Public Health		
♦ The Project is consistent with the MEPA Public Involvement Protocol for Environmental Justice Populations (effective date of January 1, 2022). Public participation will meet or exceed the requirements of the EJ Policy. ♦ The Project has made and will continue to make diligent effort to promote public participation opportunities for all members of the public, including those with limited English proficiency (see Table 9.2-1).	Prior to and during construction	Included in the overall Project cost
The Project is also consistent with the MEPA Interim Protocol for Analysis of Project Impacts on Environmental Justice Populations (effective date of January 1, 2022). An enhanced analysis of potential impacts to all populations, including EJ populations, has been conducted and mitigation measures identified (see section 5.16.2). Impacts are anticipated to primarily result from construction-related activities. They will be temporary and minimized through several measures described above under traffic, air quality, and noise.	During construction	Included in the Project cost

Table 7.3-2 Summary of Construction Period Mitigation Commitments (Continued)

Mitigation Measures	Schedule	Cost
The Project will promote climate change resiliency and minimize potential effects from climate change to surrounding communities including EJ populations. The Airport has adopted several green initiatives to reduce greenhouse gas emissions including installation of EV charging stations and will install a stormwater management system designed to reduce runoff and flooding.	During construction and operation	Included in the Project cost

Chapter 8.0

Regulatory Compliance

8.0 REGULATORY COMPLIANCE (MEPA)

8.1 Summary of Regulatory Compliance

A number of regulatory agencies will review the proposed Project. Federal agencies that will be involved include the Federal Aviation Administration and U.S. Environmental Protection Agency. State programs will include several divisions within the MA Department of Environmental Protection along with the Massachusetts Department of Transportation Aeronautics Division. No further review by MA Natural Heritage and Endangered Species Program is anticipated to be required.

The Project triggers review as a Development of Regional Impact (DRI) under the Cape Cod Commission Act and as such the project must be consistent with the CCC's Regional Policy Plan. Local review will be conducted by the Barnstable Planning Board, Conservation Commission, and Board of Health.

This section summarizes the specific regulatory programs and performance standards that are applicable to the Project and describes how the project meets those performance standards.

Table 8-1 List of Federal, State and Local Permits

Agency Name	Permit or Action
Federal	
Environmental Protection Agency	Coverage under National Pollutant Discharge Elimination System (NPDES) Construction Activities Permit
	Sole Source Aquifer Review
Federal Aviation Administration (FAA), U.S. Army Corps of Engineers; Tribal Consultation; State Historic Preservation Officer (SHPO)	Review under Section 106 of the National Historic Preservation Act (36 CFR 800)
FAA	Federal Aviation Administration (FAA) planning, design, and safety Standards: AC 150/5300-13B Airport Design, Part 77
Department of Interior, U.S. Fish and Wildlife Service (USFWS)	Section 7 Consultation under U.S. Endangered Species Act
State	
Massachusetts Environmental Policy Act Office ("MEPA")	MEPA Certificate
Massachusetts Department of Environment (MassDEP)	401 Water Quality Certification pursuant to Section 401 of the Clean Water Act
	Massachusetts Contingency Plan Review
	Underground Injection Control
Massachusetts Historical Commission (MHC)	State Historic Register Review (Chapter 256)
Massachusetts Office of Coastal Zone Management (CZM)	Federal Consistency Determination

Table 8-1 List of Federal, State and Local Permits (Continued)

Agency Name	Permit or Action
Regional	
Cape Cod Commission	Development of Regional Impact (DRI) determination pursuant to the Cape Cod Commission Act.
Town of Barnstable	
Barnstable Conservation Commission	Local Wetlands Ordinance Chapter 237
Barnstable Planning Department	Local Zoning Code Chapter 240

8.2 Federal Permits/Approvals

8.2.1 Federal Aviation Administration Standards

FAA design standards control matters such as penetration of airspace by fixed objects (e.g., antennas, utility poles), proximity of taxiways to runways, maneuvering of aircraft the ground both when the Air Traffic Control Tower (ATCT) is open and when it is closed, dimensions of runway safety areas, and interference with aircraft guidance systems. The purpose of the standards is to promote safe and efficient operation of Airports. The following points are important considerations for airport projects.

Part 77 primary surface: is an imaginary sloped surface extending up and out from the ends and sides of a runway; penetrations of the primary surface require a waiver of FAA standards. At HYA, the Part 77 primary surface is 1,000 feet wide, centered on the runway, and its elevation matches that of the runway. Beginning 500 feet from the runway centerline on each side, the "Part 77 transitional surface" begins and climbs at a ratio of one foot of height for every seven feet of horizontal distance to a height of 150 feet above the runway elevation. For design purposes, this means that no fixed obstructions should be at ground level within 500 feet of the runway, and a fence 9' high should be no closer than 563 feet (7X9=63) from the runway centerline (assuming the ground at the fence is at the same elevation as the runway). Higher objects must be correspondingly more distant; a 25-foot-tall building should be 675' (500+7X25) from the runway.

Taxiway separation requirements: depend on the size of planes that use the airport and the approach visibility minimums, the minimum height at which the pilot of an approaching plane must see the runway end to complete the landing. For RW 15-33 and RW 6-24, the taxiway centerline should be at least 400' distance from the runway centerline.

Runway Safety Area: is a defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

Runway Protection Zone (RPZ) is an area off the runway end to enhance the protection of people and property on the ground.

Runway Object Free Area (ROFA) / Taxiway Object Free Area (TOFA) is an area on the ground centered on a runway or taxiway provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the Object Free Area for air navigation or aircraft ground maneuvering purposes.

A glide slope antenna is a navigation device that beams out to approaching aircraft the proper glide slope to maintain for a safe landing. Many but not all aircraft have avionics equipment in the cockpit to "read" and interpret this beam for the pilot. Following the graphic symbols used by the equipment, pilots will adjust their angle of approach if they stray above or below the signal thus sent out. This navigation aid is critical in inclement weather conditions when visibility is restricted.

A glide slope antenna has a defined critical area around it. Since the signal transmitted by the antenna may be affected and altered by nearby metallic objects, this critical area establishes safe distances insuring the proper operation of the device. In circumstances where a taxiway crosses a glide slope antenna field, the taxiway pavement is marked with a defined "hold line." Before proceeding beyond this point during periods when the ATCT is open, the pilot must be granted specific instructions to proceed by ATCT personnel, who are monitoring approaching aircraft. When clearance is given, the pilot then proceeds into the critical area to the takeoff point.

When the ATCT tower is closed, it is the responsibility of the pilot on the taxiway to monitor radio traffic to ascertain whether there are any aircraft on final approach to the runway end served by the glide slope antenna. If so, that aircraft must land before the pilot can proceed through the critical area to the runway end for takeoff. At HYA, there is a glide slope antenna field east of the RW 24 end, and one north of the RW 15 end.

A **localizer antenna** is an antenna that provides horizontal (directional) control for airplanes making instrument landings. At HYA, localizer antennas south of RW 6 end and east of RW 33 end, to provide guidance to aircraft approaching for landing on RW 24 and RW 15. Each localizer antenna has a critical area 250' in diameter around it.

8.2.2 Airport Layout Plan Approval

FAA is responsible for considering the environmental impacts of proposed FAA approvals of Airport Layout Plan (ALP) modifications (regardless of funding sources), FAA-funded airport actions, and ensuring compliance with NEPA requirements and other Federal environmental laws, regulations, and orders. FAA personnel must comply with the NEPA requirements in Order 1050.1F, supplemented by the current version of FAA Order 5050.4, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects*.

8.2.3 National Environmental Policy Act and the Council on Environmental Quality Regulations

NEPA the CEQ Regulations establish a broad national policy to protect and enhance the quality of the human environment and require Federal agencies to develop programs and measures to meet national environmental goals. Section 102(2) of NEPA provides specific directions to Federal agencies on how to implement the goals of NEPA. The major provisions of NEPA include the requirement to

use a systematic, interdisciplinary approach and develop implementing methods and procedures. Section 102(2)(C) requires detailed analysis in the form of Environmental Impact Statements (EISs) for proposed major Federal actions significantly affecting the quality of the human environment. The CEQ Regulations additionally provide for Environmental Assessments (EAs) to assist agencies in determining whether potential environmental impacts are significant and Categorical Exclusions (CATEXs), which are categories of actions that the FAA has determined, based on previous experience, do not have significant individual or cumulative impact on the quality of the human environment except in extraordinary circumstances. The CEQ Regulations direct Federal agencies to list all Federal permits, licenses, and other approvals that must be obtained in implementing the proposed action, and, to the fullest extent possible, integrate compliance with such requirements with the NEPA process.

8.2.4 Clean Water Act, Section 404

Section 404 of the Clean Water Act (CWA) regulates the discharge of dredged or fill materials into the Waters of the United States (waters of the U.S.), including adjacent wetlands. Any discharge of dredged or fill material into Waters of the U.S. and/or adjacent wetlands within the project will require approval from the U.S. Army Corps of Engineers (USACE) in accordance with Section 404 of the CWA. For the purposes of this document, based on recent rule issued by EPA on the definition of the waters of the U.S.[1], the ponds and associated wetlands on Airport do not appear to be jurisdictional under Section 404.

8.2.5 Section 7 of the Endangered Species Act

The purpose of the U.S. Endangered Species Act (ESA) is to protect and recover imperiled species and the ecosystems upon which they depend. It is administered by the Interior Department's U.S. Fish and Wildlife Service (USFWS) and the Commerce Department's National Marine Fisheries Service (NMFS). The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and anadromous fish species. Under the ESA, species may be listed as either endangered or threatened. "Endangered" means a species is in danger of extinction throughout all or a significant portion of its range. "Threatened" means a species is likely to become endangered within the foreseeable future. The ESA protects endangered and threatened species and their habitats by prohibiting the "take" of listed animals and the interstate or international trade in listed plants and animals, including their parts and products, except under Federal permit.

Before initiating an action, under Section 7 of the ESA the Federal agency (i.e., FAA) must coordinate with the USFWS as to the species that may be within their action area. If a listed species is present, the Federal agency must determine whether the project may affect it. If so, consultation may be required. During consultation, the "action" agency receives a "biological opinion" or concurrence letter addressing the proposed action. If the action agency determines (and the USFWS agrees) that the project is not likely to adversely affect a listed species or designated critical habitat, and the

[1] Revised Definition of "Waters of the United States" 88 Fed. Reg. 3004 (January 18, 2023) (to be codified at 33 CFR 328, 40 CFR 120)

USFWS concurs in writing, then the consultation (informal to this point) is concluded. Initial consultation regarding the American chaffseed resulted in a "no effect" determination. Initial consultation with regards to the Northern Long-eared Bat resulted in a "may effect" and consultation will continue with construction period specifics to be provided to USFWS.

8.2.6 Section 106 of the National Historic Preservation Act

Section 106 of the National Historic Preservation Act of 1966 requires Federal agencies to consider the effects of their projects on properties that are listed in, or are eligible for listing in, the National Register of Historic Places. The lead Federal agency for a project must determine whether any property located within the project's Area of Potential Effect (APE) is listed in, or may be eligible for listing in, the National Register. The APE for archaeological resources is defined as locations where the proposed project may alter or disturb surface and/or subsurface soils that contain, or have the potential to contain, archaeological sites. For the purposes of Section 106, FAA is the lead Federal Agency and the process will be administered on the state level by the State Historic Preservation Officer (Massachusetts Historical Commission.

The Barnstable Historical Commission was included in the distribution of the ENF. Per MHC comment letter, the Proponent is in the process of preparing an avoidance plan to be submitted to MHC for review prior to any land disturbing project which will likely result in a "no effect" determination. FAA will initiate consultation with the Tribal Historic Preservation Officers.

8.2.7 National Pollutant Discharge Elimination System (NPDES) – Construction General Permit

The NPDES Construction General Permit (CGP) authorizes stormwater discharges from construction activities that result in a total land disturbance of equal to or greater than one acre, where those discharges enter Waters of the U.S. or a municipal separate storm sewer system (MS4) leading to Waters of the U.S. subject to the conditions set forth in the CGP. Constructing the proposed improvements will alter more than one acre of land and stormwater may be discharged to Waters of the U.S.; therefore, compliance with the CGP is required.

As part of the Notice of Intent Form, the Airport must certify that it has developed and will implement a Stormwater Pollution Prevention Plan (SWPPP) during construction. The SWPPP describes measures that will be taken during construction to ensure that construction activities do not cause impact to wetlands and water resources. These include structural measures to temporarily store runoff and trap sediment; an inventory of hazardous materials used during construction and measures to prevent a spill; schedule for inspecting measures; and contact information for personnel responsible for implementing the SWPPP.

- Silt fences and/or hay bales will be located along the edges of the construction area.
- Disturbed portions of the site where construction activity will cease temporarily for 21 or more will be stabilized with temporary seed, mulch or geotextiles.
- Stockpiles will be located as far away from wetland resource areas as is practical with a minimum distance of 100 feet unless otherwise authorized.

- Runoff water will be intercepted and directed from work areas to appropriate sediment traps.
- Inlets to active catch basins will be protected from sedimentation by hay bales.
- During construction, all potential contaminants will be stored, handled and disposed of so that accidental releases to the environment are avoided. Spill prevention and control measures will be implemented consistent with the Airport's Spill Prevention, Control and Countermeasure Plan (SPCCP), and will include measures to prevent spills, provide emergency response measures and training of all construction personnel.
- All refueling activities and equipment maintenance activities will be conducted on impervious area, with containment. Equipment maintenance in the field will be limited to the minimum necessary to keep equipment functioning (i.e., greasing of fittings and joints).
- All erosion and sediment control measures will be maintained in effective operating condition. Regular inspections of the controls will be conducted and documented. Inspections will be conducted after significant rainfall events to ensure that sediment control measures are functioning as intended.
- Permanent site stabilization (e.g., planting and seeding) will be undertaken upon completion of the applicable project phase. After the entire site is permanently stabilized, temporary erosion and sediment control measures will be removed.
- All measures outlined in FAA AC 150/5370-10A Standards for Specifying Construction of Airports will be incorporated into project plans and specifications.

8.3 State Permits and Approvals

8.3.1 Massachusetts Wetlands Protection Act (M.G.L. c.131, s.40; 310 CMR 10.00)

The Massachusetts Wetlands Protection Act (WPA) regulates alteration of state jurisdictional wetland resource areas and the Massachusetts Wetlands Protection Act Regulations (WPA Regulations) identify wetland resource areas subject to protection and outline the regulations for work in these wetland resource areas. Although a state law, the WPA is administered at the local level by the municipal Conservation Commission. Areas subject to protection within the project site include the Upper Gate Pond, associated Bordering Vegetated Wetlands and other state wetland resource areas as described in Section 5.4. Generally speaking, the WPA requires the preparation of a Notice of Intent (NOI) for work within a wetland resource area and/or work within 100 feet of certain wetland resource areas (i.e., the 100-foot Buffer Zone). The performance standards for work or activities occurring within each state regulated wetland resource area are identified in the WPA regulations.

A NOI will be prepared and submitted to the Barnstable Conservation Commissions for activities within areas subject to protection under the WPA requesting an Order of Conditions. The NOI will be submitted following receipt of the Final Certificate from MEPA on the EIR and the Decision on the DRI. See Section 5.4 of this DEIR for more detail regarding onsite wetland resources, Section 6.1 for anticipated wetland alteration and Section 7.0 for proposed mitigation measures.

8.3.1.1 Compliance with Wetlands Protection Act Regulations and Performance Standards

Work in BVW consists of grading and fill associated with the relocation of Taxiway D totaling 4,600 sf associated with BVW along the southern edge of Upper Gate Pond.

Bordering Vegetated Wetlands

310 CMR 10.55(4)(a) – Where the presumption set forth in 310 CMR 10.55(3) is not overcome, any proposed work in a Bordering Vegetated Wetland shall not destroy or otherwise impair any portion of said area.

See 310 CMR 10.55(4)(b) below.

310 CMR 10.55(4)(b) - Notwithstanding the provisions of 310 CMR 10.55(4)(a), the issuing authority may issue an Order of Conditions permitting work which results in the loss of up to 5,000 square feet of Bordering Vegetated Wetland when said area is replaced in accordance with the following general conditions and any additional, specific conditions the issuing authority deems necessary to ensure that the replacement area will function in a manner similar to the area that will be lost:

1. The surface of the replacement area to be created (the replacement area) shall be equal to that of the area that will be lost (the lost area);

A wetland replication area of at least 4,600 sf, a ratio of replication of 1:1 will be designed in accordance with this standard.

2. The ground water and surface elevation of the replacement area shall be approximately equal to that of the lost area;

The proposed replication area will be designed so that the ground water and surface elevations are approximately equal to those of the lost area.

The overall horizontal configuration and location of the replacement area with respect to the bank shall be similar to that of the lost area;

A replication area will be located within the same wetland complex and hydrologic system as the impacted wetland resource. The site was selected to provide on-Airport, in-kind wetland mitigation. The horizontal configuration of the wetland mitigation area will be designed to approximate that of the BVW impact area to the extent feasible.

3. The replacement area shall have an unrestricted hydraulic connection to the same waterbody or waterway associated with the lost area;

The proposed wetland replication area would have an unrestricted hydraulic connection to the contiguous BVW system on the Airport. The impact area is along the border of Upper Gate Pond. The primary hydrologic input to the wetland replication area would be derived from the same existing surface water and rainfall sources that currently contribute to the BVW impact area.

4. The replacement area shall be located within the same general area of the water body or reach of the waterway as the lost area;

The proposed wetland replication area will be located within the same general area of the lost area to the extent feasible.

At least 75% of the surface of the replacement area shall be reestablished with indigenous wetland plant species within two growing seasons, and prior to said vegetative reestablishment any exposed soil in the replacement area shall be temporarily stabilized to prevent erosion in accordance with standard U.S. Soil Conservation Service methods;

The wetland replication plan would be designed to create a shrub scrub habitat within two growing seasons, providing a minimum of 75 percent surface coverage with indigenous wetland plant species. Exposed substrates would be protected against erosion until re-establishment of wetland vegetation occurs. Exposed soils would be temporarily stabilized using straw mulch or other appropriate erosion control measures in the event that seasonal conditions result in a delay in seeding. Following final grading, an entrenched staked haybale and silt fence barrier would be installed around the outside perimeter of the wetland replication area, as necessary. In addition, the replication area would be monitored during at least two complete growing seasons by a qualified Wetland Scientist as is typically required by an Order of Conditions.

5. The replacement area shall be provided in a manner which is consistent with all other General Performance Standards for each resource area in Part III of 310 CMR 10.00.

The proposed replacement area is being provided in a manner that is consistent with all other General Performance Standards. More specifically, construction of the replacement area would occur in the buffer zone to BVW and would not alter other resource areas.

310 CMR 10.55(4)(d) - Notwithstanding the provisions of 310 CMR 10.55(4)(a),(b) and (c), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59.

This standard is not applicable. The Preferred Alternative site is not located in Estimated Habitat.

310 CMR 10.55(4)(e) Any proposed work shall not destroy or otherwise impair any portion of a Bordering Vegetated Wetland that is within an Area of Critical Environmental Concern designated by the Secretary of Energy and Environmental Affairs under M.G.L. c. 21A, § 2(7) and 301 CMR 12.00: Areas of Critical Environmental Concern. 310 CMR 10.55(4)(e):

1. supersedes the provisions of 310 CMR 10.55(4)(b) and (c);
2. shall not apply if the presumption set forth at 310 CMR 10.55(3) is overcome;

3. shall not apply to work proposed under 310 CMR 10.53(3)(l); and

6. shall not apply to maintenance of stormwater detention, retention, or sedimentation ponds, or to maintenance of stormwater energy dissipating structures, that have been constructed in accordance with a valid order of conditions.

The Airport is not located within an Area of Critical Environmental Concern (ACEC) and therefore complies with this Standard.

1. Land Under Water

According to 310 CMR 10.56 (4)(a), "any proposed work within LUW shall not impair the following:

(1) The water carrying capacity within the defined channel, which is provided by said land in conjunction with the banks;

As the impacted bank is associated with a pond and thus does not have a defined channel, water carrying capacity will not be impeded.

(2) Ground and surface water quality

Appropriate sediment control methods would be utilized during installation of the taxiway slope — excavation, dewatering, fill installation placement processes.

(3) The capacity of said land to provide breeding habitat, escape cover and food for fisheries;

The Proposed Action would provide similar habitat as to the impacted areas through native plantings along the new bank of Upper Gate Pond created by the slope construction.

(4) The capacity of said land to provide important wildlife habitat functions.

The Proposed Action would permanently impact 12,700 sf of LUW. This is a small percentage of the LUW, and open water habitat present among Upper Gate Pond and other ponds at the Airport including Lewis Pond and Mary Dunn Pond. Additionally, based on existing field investigations, the area of impact is shallow and heavily impacted by sediment, aquatic vegetation, and fluctuating water levels and unlikely to provide suitable habitat for fisheries. Therefore, this Proposed Action would not significantly alter the habitat available in this area.

(b) Notwithstanding the provisions of 310 CMR 10.56(4)(a), the issuing authority may issue an Order in accordance with M.G.L. c.131, §40 to maintain or improve boat channels within Land Under Water Bodies and Waterways when said work is designed and carried out using the best practical measures so as to minimize adverse effects such as the suspension or transport of pollutants, increases in turbidity, the smothering of bottom organisms, the accumulation of pollutants by organisms or the destruction of fisheries habitat or nutrient source areas.

The Proposed Action does not involve maintenance or improvement of boat channels; therefore, this standard does not apply.

(c) Notwithstanding the provisions of 310 CMR 10.56(4)(a) or (b), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59.

According to current mapped habitat identified by the NHESP, no Estimated habitats exist within the Preferred Alternative area. Therefore, the Preferred Alternative would comply with this standard.

2. Inland Bank

The Preferred Alternative's impacts to Inland Bank are 300 lf along the bank of Upper Gate Pond. This bank would be re-created along the toe of slope of the new taxiway embankment.

WPA Regulations (310 CMR 10.54(4)(a) stipulate that *"any proposed work on a Bank shall not impair the following:"*

1. the physical stability of the Bank;

This Preferred Alternative would create permanent impacts to bank during Taxiway D construction. All temporary impacts would be restored in place.

2. the water carrying capacity of the existing channel within the Bank;

The Preferred Alternative does not have an impact on water carrying capacity within a channel. This standard is not applicable.

3. ground water and surface water quality;

The Preferred Alternative would serve to improve ground and surface water quality by improving stormwater management facilities within the Proposed Action area to the extent feasible.

4. the capacity of the bank to provide breeding habitat, escape cover and food for fisheries;

The Preferred Alternative would not impair the capacity of the Bank to provide breeding habitat, escape cover, and food for fisheries. Bank restoration in kind would occur upon the completion of construction and would provide a wider variety of native species and plantings than currently exist.

5. the capacity of the Bank to provide important wildlife habitat functions. A project or projects on a single lot, for which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 50 feet (whichever is less) of the length of the bank found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above thresholds may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.

A Wildlife Habitat Evaluation will be prepared to evaluate the proposed work on 300 lf of Bank. The intent would be to replicate wildlife habitat functions within the wetland replication area as well as the re-created bank of the pond at the toe of slope of the new taxiway.

310 CMR 10.54(4)(b)

WPA Regulations (310 CMR 10.54(4)(b)) state that "Notwithstanding the provisions of 310 CMR 10.54(4)(a), structures may be permitted in or on a bank when required to prevent flood damage to facilities, buildings and roads constructed prior to the effective date of 310 CMR 10.51 through 10.60 or constructed pursuant to a Notice of Intent filed prior to the effective date of 310 CMR 10.51 through 10.60 (April 1, 1983), including the renovation or reconstruction (but not substantial enlargement) of such facilities, buildings and roads, provided that the following requirements are met:

1. The proposed protective structure, renovation or reconstruction is designed and constructed using best practical measures so as to minimize adverse effects on the characteristics and functions of the resource area;

The Preferred Alternative does not propose any structures on the Bank. This standard is not applicable.

2. The applicant demonstrates that there is no reasonable method of protecting, renovating or re-building the facility in question other than the one proposed.

The Preferred Alternative does not propose any structures on the Bank. This standard is not applicable.

310 CMR 10.54(4)(c)

Notwithstanding the provisions of 310 CMR 10.54(a) or (b), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59.

This standard is not applicable. There are no mapped Estimated Habitat of Rare Species on the Proposed Action site (NHESP, 2021).

8.3.2 401 Water Quality Certification Program (314 CMR 9.00)

Section 401 of the Clean Water Act requires that states certify that Federal actions will not prevent the attainment of state water quality criteria. The proposed airport improvements will involve work in Waters of the U.S. and associated wetlands, thereby requiring a permit from the USACE per Section 404. Consequently, a Water Quality Certification is required from MassDEP per 314 CMR 9.00. For minor impact projects, i.e., projects that alter less than 5,000 square feet of federal and state jurisdictional wetlands and/or involve dredging less than 100 cubic yards of material and receive an Order of Conditions (wetlands permit) per the Massachusetts Wetlands Protection Act, no individual Water Quality Certification is needed. For projects that exceed those thresholds, an Individual Water Quality Certification is needed from MassDEP.

Constructing the proposed Airport improvements will require work in state wetlands and waterways and will exceed the above thresholds and require an Individual Water Quality Certification. Estimates of the total area of wetland resources that will be altered are greater than 5,000 square feet (see Section 6.1.2.3). Therefore, a Section 401 Water Quality Certification permit will be required.

Whereas this is a state permit, and the project requires MEPA review, the MassDEP cannot issue the WQC until the Final Certificate on the EIR is issued. The MassDOT anticipates submitting the WQC after MEPA and CCC review is complete.

8.3.2.1 Massachusetts Stormwater Regulations (314 CMR 9.06)

Massachusetts Stormwater Regulations found in 314 CMR 9.06, establish stormwater standards as a regulatory requirement. These standards were developed to regulate the quantity (flow) of stormwater runoff from project sites as well as stormwater quality. The proposed improvements will require stormwater runoff control features and will need to comply with the standards to the maximum extent practicable for areas considered to be redevelopment. Stormwater management measures will comply with the Standards fully for areas considered to be new development. These provisions are reviewed by the Conservation Commission pursuant to the WPA and MassDEP via WQC application review.

See Section 6.1.2 – Stormwater Management for a discussion of stormwater assessment, best management practices (BMPs) and compliance with the Massachusetts Stormwater Standards.

8.3.2.2 Compliance with Criteria for the Evaluation of Application for Discharge of Dredged or Fill Material

Under 314 CMR 9.06(1) through (7), the proposed activities conform to the 401 WQC criteria as follows.

314 CMR 9.06(1) (in part) - No discharge of dredge or fill material shall be permitted if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences …

The proposed impacts to Upper Gate Pond are necessary for the construction of the relocated Taxiway D, which must be designed to provide overflow contingency for major rain events. As demonstrated in Section 4.1 (Alternatives Analysis), several alternatives were assessed for the drainage system design, and the proposed drainage system was determined to be the most feasible and least impactful alternative.

314 CMR 9.06(2) - No discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will avoid and minimize potential adverse impacts to the bordering or isolated vegetated wetlands, land under the water or ocean, or the intertidal zone. For discharges to bordering or isolated vegetated wetlands, such steps shall include a minimum of 1:1 restoration or replication. The Department may waive the requirement for 1:1 restoration or replication for projects which will restore or otherwise improve the natural capacity of any wetland

or other water of the Commonwealth pursuant to 314 CMR 9.06(8). However, no such project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species as specified in 310 CMR 10.00.

The Project is not located within NHESP-mapped habitat.

314 CMR 9.06(3)(a) through (k) (in part) – No discharge of dredged or fill material shall be permitted to Outstanding Resource Waters, except for the activities specified in 314 CMR 9.06(3)(a) through (k), which remain subject to an alternatives analysis and other requirements of 314 CMR 9.06 and/or 314 CMR 9.07 …

This criterion is not applicable. No discharge of dredged or fill material is proposed within vernal pools or other Outstanding Resource Waters.

314 CMR 9.06(4) – Discharge of dredged or fill material to an Outstanding Resource Water specifically identified in 314 CMR 4.06(1)(d) (e.g., vernal pools, within 400 feet of a water supply reservoir and any other areas so designated) is prohibited as provided therein unless a variance is obtained under 314 CMR 9.08.

This criterion is not applicable. No discharge of dredged or fill material is proposed within an Outstanding Resource Water per 314 40.06(1)(d).

314 CMR 9.06(5) – No discharge of dredged or fill material is permitted for the impoundment or detention of stormwater for purposes of controlling sedimentation or other pollutant attenuation. Discharge of dredged or fill material may be permitted to manage stormwater for flood control purposes only where there is no practicable alternative and provided that best management practices are implemented to prevent sedimentation or other pollution. No discharge of dredged or fill material is permitted for the impoundment or detention of stormwater in Outstanding Resource Waters for any purpose.

The Project does not involve a discharge of fill material in a wetland for the impoundment or detention of stormwater for purposes of controlling sedimentation or other pollutant attenuation.

314 CMR 9.06(6)(a) through (f) (in part) – Except as otherwise provided in 314 CMR 9.06(6), stormwater discharges shall be provided with stormwater best management practices to attenuate pollutants and to provide a setback from the receiving water or wetland in accordance with the following Stormwater Management Standards as further defined and specified in the Massachusetts Stormwater Handbook …

Stormwater discharges during construction will be managed in accordance with MassDEP's Stormwater Standards that were incorporated into the WQC regulations on January 2, 2008 at 314 CMR 9.06(6). The Project, as a redevelopment project, will comply with the Stormwater Standards to the maximum extent practicable. A summary of the proposed stormwater management system is discussed in Section 6.1.2.

314 CMR 9.06(7) – No discharge of dredged or fill material shall be permitted in the rare circumstances where the activity meets the criteria for evaluation but will result in substantial adverse impacts to the physical, chemical, or biological integrity of surface Waters of the Commonwealth.

The Project will not result in substantial adverse impacts on the physical, chemical, or biological integrity of surface Waters of the Commonwealth.

8.3.3 Massachusetts Endangered Species Act (M.G.L c.131A; 321 CMR 10.00)

The Massachusetts Endangered Species Act (MESA) prohibits the "take" of any rare plant or animal species listed as Endangered, Threatened, or of Special Concern by the Massachusetts Division of Fisheries & Wildlife (DFW). "Take" is defined in the Act as to harass, harm, pursue, hunt, shoot, hound, kill, trap, capture, collect, process, disrupt the nesting, breeding, feeding or migratory activity of an animal or to collect, pick, kill, transplant, cut or process a plant.

Consultation with the Massachusetts Natural Heritage and Endangered Species Program (NHESP) within the DFW, has identified the presence of MESA listed species on the Airport, although not in the project area, see Section 5.4 for more details.

When projects involve MESA review and also require approval pursuant to the Massachusetts Wetlands Protection Act, MESA review can be initiated by submitting the NOI (wetland permit application) to DFW. Through this review, the DFW will determine whether a Take Permit is required.

Coordination and review of this work by the DFW is anticipated to occur during MEPA review. As no work is proposed within mapped Priority Habitat, further permitting under MESA is not anticipated.

8.3.4 Massachusetts Environmental Policy Act

The project is undergoing MEPA review and is subject to a mandatory EIR pursuant to 301 CMR 11.03(1)(a)(1)5 and 11.03(1)(a)(2) because it requires Agency Actions and will result in direct alteration of 50 or more acres of land and creation of 10 or more acres of impervious area, respectively. The project is also required to prepare an EIR pursuant to 301 CMR 11.06(7)(b) because it is located within a DGA (1 mile) around one or more EJ Populations. The project exceeds ENF thresholds at 11.03(6)(b)(3) for expansion of an existing runway at an airport, 11.03(6)(b)(4) for construction of a New taxiway at an airport, and 11.03(3)(b)(1)(f)6 for alteration of one-half or more acres of other wetlands (LUW). The project requires a Section 401 Water Quality Certification (WQC) from the Massachusetts Department of Environmental Protection (MassDEP). It is subject to the MEPA GHG Emissions Policy and Protocol.

8.3.5 Massachusetts Underground Injection Program

The purpose of the MassDEP Underground Injection Control regulations, provided in 310 CMR 27.00, is to protect underground sources of drinking water by regulating the underground injection of hazardous wastes, fluids used for extraction of minerals, oil, and energy and any other fluids having potential to contaminate groundwater as required by the Federal Safe Drinking Water Act. Based

on future project designs (not completed until later project phases, i.e., permitting) details of the stormwater system will be reviewed to determine whether an underground injection permit from DEP will be required for any proposed stormwater treatment systems

8.3.6 Massachusetts Contingency Plan

Massachusetts General Law Chapter 21E is regulated through the Massachusetts Continency Plan (310 CMR 40.000 as implemented by MassDEP. The MCP creates the program for required assessment, risk assessment and remediation of oil and hazardous materials contamination. The MCP establishes the process regulating the assessment and remediation of oil and hazardous materials.

Since a portion of the proposed Projects will be performed in portions of an open MassDEP Disposal Site (see Section 6.13 for discussion of which sites) and there is potential for encountering residual contamination from closed releases, soil and groundwater will be managed in accordance with requirements of the MCP. Pending the project sequencing, the work will be performed under the Preliminary Response Action or Comprehensive Response Action provisions of the MCP, as applicable. All activities and submittals will be done in coordination with the Airport's Licensed Site Professional of Record to ensure compliance with all existing managed sites.

8.3.7 Massachusetts Coastal Zone Management Policies'

The MA Office of Coastal Zone Management is being asked to comment on this document relative to the consistency of the project with Massachusetts Coastal Policies. Specifically, the project will be reviewed to ensure that it conforms with policies for water quality, habitat, protected areas, coastal hazards, port and harbor infrastructure, public access, energy, and ocean resources, which are embodied in relevant state regulations. Each coastal policy is listed below and discussed relative to the proposed project.

The following Massachusetts Coastal Program Policies apply to the Projects:

Coastal Hazards Policy #1

Preserve, protect, restore, and enhance the beneficial functions of storm damage prevention and flood control provided by natural coastal landforms, such as dunes, beaches, barrier beaches, coastal banks, land subject to coastal storm flowage, salt marshes, and land under the ocean.

The Airport is not located in an area that could affect water circulation or sediment transport in coastal areas and thus this resource would not be impacted by the Projects.

Coastal Hazards Policy #2

Ensure that construction in water bodies and contiguous land areas will minimize interference with water circulation and sediment transport. Flood or erosion control projects must demonstrate no significant adverse effects on the project site or adjacent or downcoast areas.

The Airport is not physically located in an area that could affect water circulation or sediment transport in coastal areas and thus this resource would not be impacted by the Projects.

Coastal Hazards Policy #3

Ensure that state and federally funded public works projects proposed for location within the coastal zone will:

- Not exacerbate existing hazards or damage natural buffers or other natural resources.
- Be reasonably safe from flood and erosion-related damage.
- Not promote growth and development in hazard-prone or buffer areas, especially in velocity zones and Areas of Critical Environmental Concern.
- Not be used on Coastal Barrier Resource Units for new or substantial reconstruction of structures in a manner inconsistent with the Coastal Barrier Resource/Improvement Acts.

The FEMA Flood Insurance Rate Maps shows the Airport is not within the 100-year floodplain (**Figure 5.4-3**). The Airport property is not at a high risk of flooding. A small amount of forested area near Mary Dunn Pond, within the Airport property boundary, is within an area with a 0.2 percent annual chance of flood hazard.

The Airport is not located within an ACEC. ACECs are designated areas across Massachusetts that receive special recognition because of the quality, uniqueness, and significance of their natural and cultural resources. These unique landscapes are identified and nominated at the community level and reviewed and designated by the state's Secretary of Energy and Environmental Affairs. This designation increases environmental oversight by increasing state permitting standards through elevated performance standards and lowering thresholds for review.

The Airport is not located within a Coastal Barrier resource. Naturally occurring vegetated buffers around sensitive wetland areas exist to varying degrees around Mary Dunn Pond and Lamson Pond and the various isolated freshwater wetlands.

Energy Policy #2

Encourage energy conservation and the use of renewable sources such as solar and wind power in order to assist in meeting the energy needs of the Commonwealth.

The Airport is committed to energy conservation and maintains two solar fields (24,640 solar panels in total) on the northern side of the property, occupying approximately 20 acres of Airport property and the adjacent Fire District property.

The solar fields generate approximately 6.7 megawatts (direct current or DC) of energy and are estimated to offset more than 5,000 tons of CO2 emissions annually. Additionally, the Airport has implemented electric vehicle charging stations in three parking lot locations; has worked with Cape Air to install roof mounted solar arrays on two leased hangers; and has purchased electric and

sustainable mowing equipment. The Airport will continue to seek opportunities, including support infrastructure for electric aircraft, that encourage energy conservation and the use of renewable sources.

Growth Management Policy #1

Encourage sustainable development that is consistent with state, regional, and local plans and supports the quality and character of the community.

Construction projects associated with the Airport Master Plan are consistent with state, regional, and local plans to maintain a vital transportation link for the Cape Cod transportation system. These include adherence to the goals and objectives of the Cape Code Commission (CCC) Regional Policy Plan (RPP), and the Town of Barnstable Local Comprehensive Plan (2010).

Growth Management Policy #2

Ensure that state and federally funded infrastructure projects in the coastal zone primarily serve existing developed areas, assigning highest priority to projects that meet the needs of urban and community development centers.

Construction associated with the Airport Master Plan will be designed to enhance safety operations and improve the economic impact of the community and Airport, such that the Airport will continue to provide a critical node in the transportation system for the Cape Cod region and beyond.

Growth Management Policy #3

Encourage the revitalization and enhancement of existing development centers in the coastal zone through technical assistance and financial support for residential, commercial, and industrial development.

Projects recommended by the Airport Master Plan are designed to enhance development within the commercial areas, including the Hyannis Gateway and Transportation Hub within the Downtown Hyannis Growth Incentive Zone to promote growth of existing commercial businesses.

Habitat Policy #1

Protect coastal, estuarine, and marine habitats—including salt marshes, shellfish beds, submerged aquatic vegetation, dunes, beaches, barrier beaches, banks, salt ponds, eelgrass beds, tidal flats, rocky shores, bays, sounds, and other ocean habitats—and coastal freshwater streams, ponds, and wetlands to preserve critical wildlife habitat and other important functions and services including nutrient and sediment attenuation, wave and storm damage protection, and landform movement and processes.

The Airport is not located within or adjacent to coastal, estuarine, or marine habitats and thus this resource is not anticipated to be impacted by the proposed Project. Measures to avoid and/or minimize impacts to the freshwater wetlands and wildlife habitat located within and immediately adjacent to the Airport are evaluated in Section 6.7.2.

Habitat Policy #2

Advance the restoration of degraded or former habitats in coastal and marine areas.

The Airport currently does not have any degraded or former habitats in coastal and marine areas. Accordingly, these resource areas would not be impacted by the proposed Projects. Minimization of impacts and restoration of the natural vegetation communities surrounding the freshwater wetland habitats are incorporated within the Project and detailed in Section 6.1.

Protected Areas Policy #1

Preserve, restore, and enhance coastal Areas of Critical Environmental Concern, which are complexes of natural and cultural resources of regional or statewide significance.

The Airport is not located within or adjacent to an ACEC and thus this resource would not be impacted by proposed projects.

Protected Areas Policy #2

Protect state designated scenic rivers in the coastal zone.

State designated scenic rivers, as depicted on the National Wild and Scenic Rivers Map, are not located on the Airport, and thus this resource would not be impacted by proposed projects.

Protected Areas Policy #3

Ensure that proposed developments in or near designated or registered historic places respect the preservation intent of the designation and that potential adverse effects are minimized.

Through the MEPA/NEPA process, federal agencies are required to consult with the State Historic Preservation Offices (SHPO) and with the Tribal Historic Preservations Offices (THPO) through the Section 106 process. Appropriate mitigation measures will be evaluated to avoid and/or minimize impacts to designated or registered historic places.

Water Quality Policy #1

Ensure that point-source discharges and withdrawals in or affecting the coastal zone do not compromise water quality standards and protect designated uses and other interests.

The proposed Projects will not contribute to existing point-source discharges or withdrawals in or affecting the coastal zone do not compromise or provide only minimal reduction in water quality standards and protect designated uses and other interests. Appropriate stormwater management measures are identified in Section 6.1.2.

Water Quality Policy #2

Ensure the implementation of nonpoint source pollution controls to promote the attainment of water quality standards and protect designated uses and other interests.

Water quality standards and measures to minimize/avoid nonpoint source pollution is identified in Section 6.2.2. For each project involving impervious surfaces, a detailed drainage system will be installed at the Airport that meets the MA Stormwater Standards. Stormwater generated from new impervious surfaces will be detained to control the 100-year flood event and prevent flood impacts. Since discharge is to "critical waters" (Zone II of public water supply, and potentially Vernal Pool), the first inch of rainfall will be treated prior to discharge.

Water Quality Policy #3

Ensure that subsurface waste discharges conform to applicable standards, including the siting, construction, and maintenance requirements for on-site wastewater disposal systems, water quality standards, established Total Maximum Daily Load limits, and prohibitions on facilities in high-hazard areas.

The Airport is in compliance with applicable standards subsurface waste discharges, including the siting, construction, and maintenance requirements for on-site wastewater disposal systems, water quality standards, established Total Maximum Daily Load limits, and prohibitions on facilities in high-hazard areas.

8.4 Regional

8.4.1 Development of Regional Impact

The Cape Cod Commission (CCC) regulates a project of a certain size or magnitude as a Development of Regional Impact. Such projects must be consistent with the minimum performance standards contained in the CCC Regional Policy Plan (RPP). The 2018 RPP, as amended in 2021, adopts goals to promote the values and purposes of the CCC Act and to protect Cape Cod's assets.

This Project will require a DRI Application to the CCC and public hearings on the application. The DRI Application will address to the extent feasible, each project's consistency with applicable goals including Natural Systems (i.e. Water Resources, Wetland Resources, Wildlife and Plant Habitat and Open Space), Built Systems (i.e. Community Design, Coastal Resiliency, Capital Facilities and Infrastructure, Transportation, Energy, Waste Management, and Climate Mitigation) and finally, Community Systems (Cultural Heritage, Economy, and Housing). The DRI application will also discuss public benefits.

Chapter 9.0

Public and Agency Coordination

Chapter 10.0

Response to Comments

10.0 RESPONSE TO COMMENTS

This Section provides responses to comment letters from government agencies, private organizations and others received on the ENF submitted on November 30, 2022. The comment letters are reprinted in this Section, and specific comments within each letter are noted in the margin with an abbreviation and a sequential numbering. Following the letter is a listing of the comments accompanied by a response to each.

10.1 MEPA Certificate and Associated Comment Letters

Each letter has been assigned an abbreviation; the MEPA Certificate and related comment letters are listed below in Table 10-1.

Table 10-1 Secretary's Certificate and Comment Letters

Commenter	Abbreviation
EEA Secretary's Certificate on the ENF	MEPA
Massachusetts Historical Commission (MHC)	MHC
Massachusetts Department of Environmental Protection (MassDEP) – Southeast Regional Office (SERO)	DEP
Department of Energy Resources	DOER
Cape Cod Commission	CCC
Robert Writenour, Town of Yarmouth	RW
Hyannis Park Civic Association	HPCA
Paul Phalan	PP
Susan Sulkoski	SS
Thomas Sullivan	TS
Christine Greeley	CG
Betty Ludtke	BL
Donald Englert	DE
Elissa Buja	EB
Lucinda Van Doren-Abrecht	LDA
Anonymous	AN
Richard Mikolajczak	RM
Robert Berry and Kathleen Benson	RK
Susan Ascher	SA
Susan Brita	SB
Karen Ingemie	KI
George Doble	GD

SECRETARY'S CERTIFICATE ON THE DRAFT EIR (MEPA)

MEPA 01 **The DEIR should provide a detailed description of all project activities. It should include plans of existing and proposed conditions at a legible scale that clearly identify all major project components (existing and proposed buildings, access roadways, runways, taxiways, etc.), public areas, impervious areas, subsurface utilities, surface elevations, wetland resource areas, rare species habitat, ownership of parcels including easements, and stormwater and utility infrastructure.**

A Draft EA/EIR has been developed following National Environmental Policy Act (NEPA) requirements, along with Section 11.07 of the MEPA regulations and follows the DEIR Scope dated January 23, 2023, from the MEPA office, along with extensive public input.

MEPA 02 **Conceptual plans should be provided for onsite work as well as any proposed off-site work for transportation or utility improvements that will benefit the project.**

Chapter 3 – Proposed Action Description provides information on the projects included in the Proposed Action) including conceptual plans for all major project components on-site. No off-site improvements are proposed at this time.

MEPA 03 **The DEIR should clearly describe the number, location and size of existing avigation easements and proposed avigation easements that will be acquired.**

Easement plans in Appendix D include a table of information specific to each runway end. Section 3.3 discusses these proposed easement acquisitions.

MEPA 04 **It should identify any changes to activities contemplated under the Master Plan, including changes in proposed phasing or additional proposed activities, since the filing of the ENF.**

Section 1.5.1.1 and Table 1.5-1 provides a summary table describing changes to activities since the submittal of the ENF on November 30, 2022. Changes to the Project are the result of the Proponent (Airport) continuing to refine the projects proposed through conceptual design, additional need analysis, and input from the community.

Based on community input, the Airport has also investigated the feasibility of additional alternatives for the Project, including refined runway alternatives, options for an operational shift to Joint Base Cape Cod (JBCC), taxiway configurations, and airport terminal needs. As a result of this feedback, the Airport has shortened the proposed runway extension by 400 feet to address community concerns regarding noise and safety, among other modifications.

MEPA 05 **The DEIR should identify and describe applicable state, federal and local permitting and review requirements associated with the project and provide an update on the status of each of these pending actions.**

Please refer to Chapter 8, Table 8-1 for a list of federal, state and local permits

MEPA 06 **The DEIR should include a description and analysis of applicable statutory and regulatory standards and requirements, and a discussion of the project's consistency with those standards.**

Chapter 8 summarizes specific regulatory programs and performance standards that are applicable to the Project and how the project meets those performance standards.

MEPA 07 **To provide context for the proposed activities under the Master Plan, the DEIR should provide an overview of the airport's functions and activities related to GA and commercial services, with a focus on the role each of the project components plays in the operation of the airport.**

Chapter 1 provides an overview of the airport's functions and activities related to GA and commercial services, including operations and enplanement data. Chapter 2: Purpose and Need provides information on the role that each of the project components play in meeting the safety and efficiency goals of the Airport, as required by FAA and State aeronautical regulations and guidelines. Specific details on each project are provided in Chapter 3: Proposed Action Description.

MEPA 08 **It should provide a general description of airport operations, including hours of operation, conditions under which each runway is used, airplane taxiing and parking, and use of hangars and other Airport buildings.**

Please refer to Section 1.3 - Airport Background.

MEPA 09 **It should include data on past (at least for the last 15 years), current and projected levels of passenger volumes and aircraft operations on both an annual basis and for peak summer months, so as to provide a clear and full justification for the need to expand runway and taxiway capacity to accommodate projected airport and passenger growth over time.**

Please refer to Section 1.4 - Airport Activity. Additional information on activity is provided in Attachment B – Airport Master Plan Update excerpt chapters 4-6 .

MEPA 10 **The DEIR should clarify which project components are intended to support a growth in airport operations, and how implementation of each project component will be phased to accommodate growth projections over a specified time horizon.**

Aeronautical development areas within the East Ramp, North Ramp and Terminal Building enhancements are identified within the 2022 Airport Master Plan Update as needed to support the future growth in airport operations. The Airport, under FAA regulations, is focused on operating safety and efficiency (as efficiency is related to safety). The aeronautical development areas are existing areas of the airport sited for their proximity to existing infrastructure (terminal building, ramps, and FBOs). Additional development within existing aviation development areas has been noted in previous master plans (2008), and reaffirmed in the recent Master Plan in 2022. This development responds to Airport users waiting for hangars to be built on the airfield.

Development of hangars (both size and configuration) is dependent upon a private developer's need and business plan. Any future hangar development will be subject to the Airport's *Guidelines for Construction and Alteration at Cape Cod Gateway Airport*. For over twenty years, the Airport Commission has worked with tenants to provide guidance on airport development for both new development and improvements to existing infrastructure that is either owned or leased by its tenants and associated businesses. *Guidelines for Construction and Alteration* were developed to assist tenants in receiving approvals from the Airport Commission for development projects.

MEPA 11 **It should clearly identify relevant FAA design guidelines or standards to be addressed by each project, as applicable.**

Table 1.2-1 in Section 1.2 lists the relevant design criteria and FAA Advisory Circulars (AC) including AC 150/5320-5D Airport Drainage Design AC 150/5300-13B Airport Design and AC 150/5325-4B Runway Length Requirements for relevant design guidelines and/or standards to be utilized in the design for each of the projects identified in the AMPU. Airport Drainage Design AC provides guidance to engineers, airport managers and the public about the design and construction of airport surface and subsurface storm drainage systems for airport pavements.

The Airport Design AC provides standards and recommendations for airport design. The standards contained in the aforementioned advisory circulars are standards, guidelines and practices the FAA recommends for establishing an acceptable level of safety, efficiency and capacity for airport development projects. The drainage system(s) will also be designed in accordance with the MassDEP Stormwater Handbook and subsequent permitting requirements, as may be applicable at the time of final design.

MEPA 12 **It should describe the existing terminal building and proposed expansion.**

Since the filing of the ENF, there have been minor changes to the project phasing. These updates are shown in the construction phasing discussion in Chapter 3.0. Projects that have been determined to commence later than 2029 (including design phases) have been removed from the analysis provided herein. That includes any terminal modifications or expansion as well as the Runway 6 RSA enhancements..

MEPA 13 **The alternatives analysis should be supplemented in the DEIR to provide a full comparison of environmental impacts for each category of alternatives described below.**

An alternatives analysis is provided in Chapter 4.

MEPA 14 **The ENF identifies four Airside Alternatives including the No Build, FAA Recommended Length (Alternative 2), FAA Recommend Length with Displaced Thresholds (Alternative 3), and the Preferred Alternative (as described herein). It provides a limited analysis of these alternatives which does not include plans for Alternatives 2 or 3 or a detailed comparison of impacts in a narrative or tabular format.**

An alternatives analysis is provided in Chapter 4, and a detailed comparison of runway length extension alternatives in Section 4.1.1. Since the submission of the ENF, additional analysis described Chapter 2: Section 2.2.1.4 was completed, Runway 15-22 Alternative 4B was selected as the Preferred Alternative as it meets the purpose and need of the runway length requirement.

Alternative 4B proposes an 895-foot extension only to Runway 15 end for a total runway length of 6,150 feet. This alternative includes a 695-foot displaced threshold on the Runway 15 end. Taxiway A would be extended to the new runway end and connect to Runway 15 at a 90-degree angle.

MEPA 15 **The ENF indicates that this alternative [Preferred Alternative] would add 27 acres of new impervious pavement; however, the Summary Table in the ENF also notes that the total impervious creation would be 21 acres for all proposed improvements in the Master Plan. The DEIR should confirm the total amount of impervious area creation.**

The preferred alternative includes approximately 4.94 acres of new pavement (Runway and Taxiway) as updated with the elimination of the 33-end extension. There are approximately 5.7 acres of existing pavement that will be reconstructed. Pavement to be reconstructed should not be considered as new pavement

(reconstruction of other airfield pavements will add to the area of "reconstructed pavement"). The total amount of impervious has been updated to 38.42 acres project-wide, considering a full buildout scenario over the 20 year plan.

MEPA 16 **The objective of the MEPA review process is to provide disclosures of all feasible measures to avoid, minimize and mitigate Damage to the Environment. Consistent with that goal, an alternatives analysis is required to consider what effect changing the parameters and/or siting of a project, or components thereof, will have on the environment.**

An alternatives analysis is provided in Chapter 4. This chapter provides a review of the proposed Project and discusses the alternatives considered along with the potential for environmental impacts to each alternative.

MEPA 17 **The DEIR should clearly identify the purpose and need of each project. Several of the proposed improvements will be designed to meet FAA safety guidelines; however, improvements are also intended to facilitate future growth in airport operations.**

The Purpose and Need for each project is discussed in detail in Chapter 2.

MEPA 18 **The DEIR should clearly evaluate the basis for the proposed improvements, particularly the proposed runway length.**

Please refer to Chapter 2.0 which details the basis for the proposed improvements, and particularly Section 2.2.1.4 for the proposed runway extension.

MEPA 19 **The DEIR should describe how much expansion is anticipated in each of the three phases within the 20-year period.**

All projects listed in the CIP are contingent upon funding availability, environmental review approvals and receipt of permits (if applicable). Section 3.4 provides an updated project schedule.

The projects within the CIP, programmed for a specific year, may move up or down years based on the factors listed above and also FAA and MassDOT Aeronautics Division programs and priories. As noted previously, the potential hangar development within the East and North Ramp areas is contingent upon private development and the specific year is unknown.

MEPA 20 **The DEIR should describe the relevant safety guidelines and how the proposed design will achieve safety goals.**

Relevant safety guidelines per Advisory Circular AC 150/5300-13B Airport Design will be utilized to achieve FAA design safety goals. Use of the standards and guidelines contained in this advisory circular are practices the FAA recommends for establishing an acceptable level of safety, efficiency and capacity for airport development projects. Table 1.2-1 details the airfield geometry improvements at the Airport.

MEPA 21 **For each of the runway and taxiway improvements, the DEIR should identify one or more alternatives that minimize land alteration and impervious area and direct impacts to wetlands and evaluate these alternatives with respect to the FAA safety guidelines.**

Each of the runway and taxiway alternatives identified in the ENF will meet FAA design standards and safety guidelines as presented in Advisory Circular 150/5300-13B Airport Design for each of the runway and taxiway projects. The location, layout and orientation of all proposed improvements are already designed to the minimum FAA standards. With respect to the proposed Taxiway D project, there are three alternatives presented for side slope grading within the Taxiway Object Free Area (TOFA): a) 4:1 slope; 2:1 slope; retaining wall. The 4:1 slope meets standard practice for airport design, the other two alternatives are offered as a potential mitigation measure for limiting wetlands impacts.

None of the three alternatives are ideal with respect to FAA safety guidelines for proposed Taxiway D. Ideally, the entire TOFA would be graded with a 4:1 side slope to the edge of the TOFA, and beyond for use by airport operations purposes. The three alternatives included in the ENF are presented in an attempt at a reasonable compromise, balancing safety against wetlands impacts.

MEPA 22 **For improvements that are not directly safety related, the DEIR should identify any alternative configurations or locations that would avoid or minimize impacts to land alteration and impervious area.**

Alternative project configurations or locations are identified in detail in Chapter 4: Alternative Analysis. As noted above, in MEPA 18, several different iterations of the proposed Taxiway D reconfiguration were analyzed to minimize impacts to Upper Gate Pond.

MEPA 23 **For the alternatives that were studied in the ENF (described above), the DEIR should quantify the environmental impacts of each alternative, and provide a clear explanation of why the Preferred Alternative was chosen when considering the relative environmental impacts of each of the studied alternatives. The alternatives analysis and project narrative should support the selection of the Preferred Alternative for each project component that includes all feasible**

measures to avoid Damage to the Environment, or to the extent Damage to the Environment cannot be avoided, to minimize and mitigate Damage to the Environment to the maximum extent practicable.

Please refer to the alternatives analysis provided in Chapter 4 for detailed information on selection of Preferred Alternatives.

MEPA 24 **the DEIR should provide a detailed comparison of the alternatives, including more detailed descriptions and plans of each alternative. It should compare the environmental impacts of each alternative, quantitatively to the extent practicable, with respect to trip generation, parking supply, water use, wastewater generation, wetlands, impervious area and GHG emissions. The comparison should be provided in the narrative and in a tabular format.**

Chapter 4 provides information on the selection of Preferred Alternatives and a discussion of anticipated environmental considerations. Environmental impacts are further quantified in Chapter 6: Environmental Consequences.

MEPA 25 **The DEIR should address comments from the Town of Yarmouth regarding the purpose and need for the project. It should also analyze the feasibility of runway extension alternatives that provide the required runway length and consider balancing community aircraft noise impacts by factoring in location and density of residential development in areas surrounding the Airport.**

The DEIR details the purpose and need for the runway extension within Chapter 2, Section 2.2.1.4. Runway extension alternatives are discussed further in Chapter 4.0. Results from the noise analysis are presented in Section 5.9 and Section 6.6.

MEPA 26 **I note that, as of November 12, 2022, the Executive Office of Energy and Environmental Affairs (EEA) published an updated EEA EJ Maps Viewer ("Updated 2020 Environmental Justice Block Groups" tab), which indicates that the project site is now located within one EJ population characterized by Minority and Income, which was not previously mapped; within 1 mile of 11 EJ populations characterized by Minority, Income, Minority and Income, and Minority, Income and English Isolation (eight in Barnstable and three in Yarmouth), some of which were not previously mapped; and within 5 miles of 17 EJ populations characterized by Minority, Income, Minority and Income, and Minority and English Isolation (10 in Barnstable and seven in Yarmouth), some of which were not previously mapped.**

The DEIR uses the Updated 2020 Environmental Justice Block Groups via the EEA EJ Maps viewer.

MEPA 27 **Under the new regulations and protocols, all projects located in a DGA around one or more EJ populations must take steps to enhance public involvement opportunities for EJ populations, and must submit analysis of impacts to such EJ populations in the form of an EIR.**

An EJ analysis is presented in Section 5.16 including a summary of project outreach and public meetings efforts.

MEPA 28 **The DEIR should include a separate section on "Environmental Justice," and contain a full description of measures the Proponent intends to undertake to promote public involvement by such EJ populations during the remainder of the MEPA review process, including a discussion of any of the best practices listed in the MEPA EJ Public Involvement Protocol that the project intends to employ. The DEIR, or a summary thereof, should be distributed to all CBOs and tribes included in the EJ Reference List that was used to provide notice of the ENF. The Proponent should obtain a revised EJ Reference List from the MEPA Office to ensure that contact information is updated.**

A detailed EJ analysis is provided in Section 5.16

MEPA 29 **The DEIR should include a baseline assessment of any existing unfair or inequitable Environmental Burden and related public health consequences impacting EJ Populations in accordance with 301 CMR 11.07(6)(n)1 and the MEPA Interim Protocol for Analysis of EJ Impacts. Specifically, the DEIR should use the DPH EJ Tool to identify any census tract or municipality in which the EJ populations are located as exhibiting "vulnerable health EJ criteria"; this term is defined in the DPH EJ Tool to include any one of four environmentally related health indicators that are measured to be 110% above statewide rates based on a five-year rolling average.**

Please refer to the EJ analysis provided in Section 5.16.

MEPA 30 **In addition, sources of potential pollution should be identified within the identified EJ populations, based on the mapping layers available in the DPH EJ Tool.**

Pollution sources within EJ populations are identified in Figure 5.16-2.

MEPA 31 **The DEIR should provide an estimate of the increase in vehicular traffic that may be associated with the proposed terminal building expansion, as well as the total number of adt of diesel vehicles that the project is anticipated to generate including during construction.**

See response to MEPA #12

MEPA 32 **The DEIR should describe the anticipated routes of travel for project-generated vehicular traffic to determine whether such traffic would extend near EJ populations, and should discuss whether air quality may be affected in those neighborhoods.**

The anticipated travel routes are presented in Section 5.11 and the associated transportation impact to EJ communities is presented in Section 5.16.2.2.

MEPA 33 **The DEIR should discuss the extent to which Transportation Demand Management (TDM) measures will serve to reduce vehicle traffic, associated with project operations and construction.**

The Airport currently does not employ TDM measures, however, the increase in trips from the terminal improvements is anticipated to be minimal. The Airport will continue to investigate the feasibility of a TDM program, or specific TDM measures, for employees at working at the airport including the following options to enhance travel to the Airport:

- Orientation packets for employees, including information about alternative means of transportation such as rideshare services, tenant-employee carpool options and rideshare matching service with other nearby employers.
- Showers and lockers for employees;
- Flexible work schedules for employees;
- Telecommuting accommodations for employees (where applicable);
- "Guaranteed Ride Home" program;
- Transit pass subsidies;
- Secure bicycle parking;
- Carpool and vanpool program;
- Preferential parking for carpool/vanpool; and
- Provision of electrical conduit for future EV charging stations

The Airport is committed to increasing the number of electric vehicle (EV) charging stations and providing electrical conduit for future EV stations. Additionally, in 2022, the Airport received a $1.95M grant through the US Department of Transportation's Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program, to plan, permit, and design a smart microgrid project.

The future microgrid will ultimately generate and distribute clean, reliable power to the airport and facilitate reliable charging of electric ground fleet vehicles (including buses) and in the future, aircraft.

MEPA 34 **The DEIR should also discuss other potential mitigation, such as measures to discourage single occupancy vehicle (SOV) trips to the airport by passengers and visitors and installation of electric vehicle (EV) infrastructure on site.**

The US Department of Transportation's SMART Grant, awarded to the Airport in 2023 is currently selecting a project team to begin the planning phase (anticipated to start in early 2024). The smart microgrid project, as discussed above, will generate and distribute clean, reliable power to the Airport and facilitate reliable charging of electric ground fleet vehicles (including buses) and in the future, aircraft.

The project is in collaboration with MassDOT Aeronautics Division and the Cape Cod Regional Transit Authority (CCRTA) to increase clean energy independence while helping to support the disadvantaged community living near the airport in Hyannis. The microgrid will allow for the RTA to adopt electric bus infrastructure, using locally produced energy (e.g., solar and wind), serving the Airport and the region. Utilizing the CCRTA routes, to be enhanced environmentally by the development of a micro grid at the Airport, travelers and employees, if they so desire, can access the Airport via public transportation, and thereby reduce reliance on SOV trips.

MEPA 35 **The DEIR should also analyze land alteration and impervious surfaces added by the project, including implications for potential stormwater flooding and urban heat island effects in the surrounding neighborhoods.**

Land alteration quantities are detailed in Table 3.5-1. All state and federal requirements for stormwater management are addressed in Chapter 6, Section 6.1.2.1. Urban heat island effects are not anticipated as a result of the Proposed Project. A discussion of urban heat island effect is provided in Section. 6.4.2

MEPA 36 **Consistent with the Scope related to Climate Change and Land Alteration below, analysis of the stormwater management system should specifically assess whether flooding risks may be exacerbated for nearby EJ populations, including under future climate conditions, and whether existing conditions would be worsened or improved by the project design.**

The Airport is not located in a floodplain, and contains extensive areas of permeable surfaces (grass, shrub, and treed areas). No flooding risks of the Airport are anticipated. Stormwater management for the Proposed Projects is addressed in further detail in Chapter 6.

MEPA 37 **The DEIR should assess whether tree removal near EJ populations may affect urban heat island effects, and should discuss whether anticipated growth in airport operations may disproportionately affect EJ neighborhoods in terms of noise, air pollution, and traffic.**

Please refer to Section 6.4.1.4 for details on impacts from tree removals.

MEPA 38 **The DEIR should analyze any other relevant short-term and long-term environmental or public health impacts of the project, including construction period activities.**

See section 6.12.2.2.

MEPA 39 **If any disproportionate adverse effects or increased risks of climate change are identified, the DEIR must include a discussion of proposed mitigation and include such measures in draft Section 61 findings.**

Mitigation and draft Section 61 findings are provided in Chapter 7.0.

MEPA 40 **I note that generalized project benefits should not be analyzed to "net out" project impacts, unless the benefit serves to mitigate the specific impact analyzed. Particular focus should be given to benefits that serve to promote the equitable distribution of Environmental Burdens, or reduce any existing Environmental Burdens identified for the EJ population.**

Comment noted. Project benefits are not analyzed to net out project impacts. Included in the Projects is proposed mitigation, specific to the impact analyzed.

MEPA 41 **The DEIR should include a separate section on "Public Health," and discuss any known or reasonably foreseeable public health consequences that may result from the environmental impacts of the project. Particular focus should be given to any impacts that may materially exacerbate "vulnerable health EJ criteria," in accordance with the MEPA Interim Protocol for Analysis of EJ Impacts. In addition, other publicly available data, including through the DPH EJ Tool, should be surveyed to assess the public health conditions in the immediate vicinity of the project site, in accordance with 301 CMR 11.07(6)(g)10. Any project impacts that could materially exacerbate such conditions should be analyzed.**

A comprehensive review of the vulnerable health criteria and information included in the DPH EJ Tool to assess public health conditions in the area surrounding the Project Site is provided in Section 5.16.2.2 as part of the EJ evaluation. An analysis of EJ related environmental consequences is provided in Section 6.12.2.

MEPA 42 **To the extent any required Permits for the project contain performance standards intended to protect public health, the DEIR should contain specific discussion of such standards and how the project intends to meet or exceed them.**

Potential Impacts to Health and Safety are detailed in Section 6.12.2.2.

MEPA 43 **As discussed below, the DEIR should contain a comprehensive discussion of PFAS contamination on site, and should assess whether such contamination or cleanup activities will disproportionately affect EJ neighborhoods or other vulnerable populations near the site.**

PFAS is being comprehensively addressed by the Airport, and a full summary of the activities it has undertaken to respond to PFAS, including holding several public information sessions, is provided on its website https://flyhya.com/airport-info/pfas/

The Airport has continued to engage neighbors to provide updates on environmental practices related to ongoing remediation efforts on Airport related to PFAS.

The Airport has completed the following:

- 2015: ceased use of AFFF in 2015 for tri-annual exercises and annual testing.
- 2016: Cape Cod Gateway Airport was the first airport in Massachusetts to purchase an ecologic unit to test AFFF consistency to meet annual FAA testing requirements without the need to deploy AFFF on the ground for testing. HYA bought this unit before it was approved by FAA as an alternative testing platform to be as proactive as possible.
- 2016: the Airport successfully recovered AFFF used in a 2016 aircraft accident response. All 10 gallons of AFFF concentrate applied at the accident site was captured in an enclosed concrete catch basin, vacuumed out and appropriately disposed of off-site.
- 2016: initiated the process of reporting and analysis following requirements outlined in Massachusetts General Law, and the Massachusetts Contingency Plan (MCP)

Additionally, the Airport continues to coordinate with MassDEP and the Town of Barnstable as they complete ongoing investigations into the impacts of PFAS in soil and groundwater. The Airport will continue reporting, testing, mitigation, and monitoring as necessary to meet MassDEP Bureau of Waste Site Cleanup reporting requirements.

Consistent with these efforts, the PFAS considerations for the proposed Projects, if applicable, are discussed in detail within Chapter 5.0/Chapter 6.0.

MEPA 44 **The DEIR should provide a detailed response to the comments from the Town of Yarmouth and residents regarding existing and proposed aircraft noise including an aircraft noise analysis and noise mitigation.**

A response to the issues and concerns raised by the Town of Yarmouth and residents is provided in Section 5.9. The sound level assessment in this document includes the use of FAA AEDT approved computer modeling to predict future sound levels from the Project as well as a comparison to existing sound levels and FAA land use compatibility.

MEPA 45 **The DEIR should include an assessment of noise levels associated with existing airport operations, as well as anticipated increases that are projected as a result of future expansion of the airport in Phases 1, 2, and 3.**

Noise associated with the existing airport operations (no-build alternative) and the Proposed Action are discussed in Section 6.6.

MEPA 46 **The noise analysis should determine the increase in noise levels caused by operations at the Airport over the 20-year period described in the Master Plan.**

The noise analysis for future conditions is discussed is Section 6.6.

MEPA 47 **It should describe existing noise levels, identify all noise-generating activities and components of the project and model noise levels under proposed conditions.**

See response to MEPA #43.

MEPA 48 **The DEIR should discuss what regulatory requirements, such as FAA guidelines or MassDEP regulations or policies, apply to noise impacts of airport operations.**

Regulatory information and sound level assessment background information is provided in Section 5.9.

MEPA 49 **The DEIR should discuss whether noise impacts are likely to disproportionately affect surrounding EJ neighborhoods or other vulnerable populations (including those that may be considered "sensitive receptor") and what mitigation could be considered to minimize the noise impacts of airport operations.**

Impacts from noise are discussed is Section 6.6.

MEPA 50 **The Town of Yarmouth's comment letter requests that aircraft noise impacts include the average annual day-night contours shown as the 55 Ldn through 80 Ldn in five-level increments, as well as single-event contours for the same Ldn increments as applicable to a range of aircraft types (identified in comments); comparable aircraft models should be used if the FAA noise model database does**

not include these aircraft types. The DEIR should present these contours for the existing flight routes commonly flown at the Airport on each of the four runway ends, and for any future flight path recommended for aircraft noise mitigation measures. The intent of these single-event aircraft noise is to better reflect the aircraft noise impact that residents experience on a daily basis.

Please refer to Section 6.6 for a comprehensive discussion on the noise assessment.

MEPA 51 **The DEIR should provide an updated table which quantifies the land alteration and impervious area associated with each project component in a tabular format. The DEIR should clarify the amount of alteration including the type of vegetation that will be cleared (i.e., mature trees, scrub shrub, etc.). It should clarify the location, type and amount of alteration in previously undisturbed areas.**

A table of land alteration including impervious areas is included in Section 3.5.

MEPA 52 **The DEIR should identify how the project is designed to avoid and minimize land alteration and impervious area. It should provide a comprehensive evaluation of all measures preserve open space and tree cover, to reduce the amount of land alteration, and to convert impervious areas to pervious materials, including reductions in pavement associated with runways and taxiways, reductions in size of aprons and hangars, and supplemental landscaping or tree planting to mitigate impacts associated with clearing.**

Chapter 4.0 provides information on alternatives identified for evaluation in the EA/EIR and discusses the opportunities to minimize land alteration and impervious area. Section 4.1.2.1 discusses Taxiway D Alternatives to reduce impacts.

MEPA 53 **The DEIR should quantify open space that will remain undisturbed and/or restored upon completion of construction.**

Please refer to Table 1.5-1 for quantities of open space and temporarily disturbed areas.

MEPA 54 **The DEIR should include site plans that clearly locate and delineate areas proposed for development and those to be left undisturbed.**

Project related land disturbances both permanent and temporary are quantified in Section 3.5 - Summary of Impacts of Proposed Action.

MEPA 55 **The DEIR should identify all easements and public utilities on-site and off-site and provide information on the parties to the easements and location and condition of public infrastructure. It should describe any constraints on project design or use of the site posed by these conditions.**

On-site utilities include drainage structures, airfield electrical systems including airfield lights, signs and Navaids, and waterlines. The location and condition of all such public infrastructure will be investigated further during the design of each project. The future design of all proposed improvements will accommodate the future use of public infrastructure. For security reasons, that information is not provided in this document.

MEPA 56 **The DEIR should identify all measures that will be employed to protect the water quality of the sole source aquifer, provide a description of the proposed stormwater management system for each project/phase and identify BMPs that will be incorporated into its design.**

Please see Table 7-3: *Summary of Mitigation Measures*.

MEPA 57 **The DEIR should describe how the proposed stormwater management system will fully comply with the MassDEP Stormwater Management Standards (SMS).**

MassDEP stormwater management standards will be met by adhering to the standards in the DEP Stormwater Handbook including methods for erosion control and methods for managing pre and post stormwater flows. Please see Section 6.1.4.1.

None of the proposed improvements are expected to result in any off-site impacts. There is no off-site increase in stormwater runoff anticipated. On-site stormwater runoff will be treated with appropriate water quality units and the design will comply with TSS removal requirements.

MEPA 58 **Given the significant amount of impervious area to be added to the project site, the Proponent should take all feasible measures to manage stormwater runoff, including by exceeding stormwater management standards and incorporating Low Impact Design (LID) strategies and green infrastructure wherever practicable; such measures should be described in the DEIR.**

All stormwater from new impervious pavements will be collected and discharged into the ground via infiltration devices and shall conform to MassDEP standards. MassDEP stormwater management standards will be met by adhering to the standards in the DEP Stormwater Handbook including methods for erosion control and methods for managing pre and post stormwater flows. Certain strategies cannot be used due to FAA airport design restrictions. Please see Section 6.1.4.1.

MEPA 59 **LID designs should be carefully considered, and where not used, the DEIR should provide a thoughtful explanation as to why they are infeasible for implementation on-site.**

Given the Airport environment, and FAA requirements for reducing wildlife hazards, stormwater management options that result in standing water are not allowed. Details on the proposed stormwater management are included in Section 6.1.4.

MEPA 60 **The DEIR should describe the extent to which the project will preserve existing tree canopies and plant additional trees, including estimates of the number of trees that will be planted.**

Carbon related emissions from tree removal are analyzed in Section 6.4.1.4. Trees are preserved to the extent that it is feasible and practicable to do so, however, the location for Projects related to existing airfield infrastructure reconstruction and pavement geometry upgrades are dictated by FAA design standards.

The DEIR also notes the Airport contains extensive forested areas north of the airfield. In this undeveloped area, approximately 110 acres of dense forest exists north of Upper Gate Pond and Lewis Pond.

The Airport maintains substantial forested areas that will continue to provide an overall net positive impact on carbon storage, sequestration, and recycling, for both the local area, and region. These forested areas would not otherwise exist if different land use (e.g., private residential development) were to take place where the Airport is located.

Accordingly, based on the Airport's "green" vision and sustainable leadership within the airport community, it will investigate opportunities to for tree planting/replating within compatible areas of the airport, as part of future Projects and within the Town of Barnstable, as feasible, using state and federal grant and funding opportunities. E.g., FAA and MassDOT Aeronautics Division (e.g., Airport Safety and Maintenance grants).

The Airport will also pursue options to preserve and protect forested land through a conservation restriction/easement. However, any release of obligated airport property invokes certain Federal requirements. The airport must seek FAA for review and approval for changes to its land use. If Federal funds were originally used to acquire the land, the FAA must also approve disposition of the Federal share of the sale proceeds.

MEPA 61 **The DEIR should demonstrate the system will be designed to accommodate larger storm events.**

All new projects will be designed to meet MassDEP stormwater standards in effect at the time of design. The stormwater systems will be designed to address future climate conditions utilizing MA Resilience Design Tool. The stormwater report will identify how the systems may accommodate the recommended 2070 100-Year 24-hour

rainfall volume of eleven (11) inches as well as the 2050 recommendation for runway and taxiway projects corresponding to the 2050 10-Year 24-hour rainfall volume of 6.1 inches. The stormwater management systems will be designed to attenuate peak flows and meet pollutant loading requirements based on future climate conditions in 2050 and 2070. Copies of the final Stormwater Management Report will be provided to MassDEP and CCC as necessary during the permitting phase.

MEPA 62 **The DEIR should provide quantitative modeling and analysis to assess the rainfall volumes that will be accommodated by the stormwater design, including under future climate conditions.**

All new projects will be designed, during the permitting phase (expected to commence in late 2024 upon completion of environmental review phases (MEPA, NEPA, CCC DRI) to meet MassDEP stormwater standards, including quantitative modeling and analysis to assess the rainfall volumes that will be accommodated by the stormwater design, including under future climate conditions if required.

MEPA 63 **It should include a plan showing the location of BMPs.**

All new projects will be designed to meet MassDEP stormwater standards. At this point of design, conceptual plans showing the location of specific BMPs have not yet been funded or developed.

MEPA 64 **The DEIR should identify any infiltration systems that may require registration under MassDEP's Underground Injection Control (UIC) program.**

The final design for each of the projects herein will identify proposed infiltration systems and will register the same with the MassDEP's Underground Injection Control (UIC) program.

MEPA 65 **The DEIR should address how the Airport will seek required MSGP permitting and describe how the project will comply any applicable NPDES performance standards related to discharges of pollutants from airplane deicing operations and other discharges covered by the MSGP.**

The Airport filed a Notice of Intent (NOI) for stormwater discharges under the 2021 Stormwater Multi-Sector General Permit (MSGP) issued on January 15, 2021 (Airport NPDES ID MAR 053164, see **Appendix F**). In accordance with NPDES permit classifications, the Airport is designated as Standard Classification Code (SIC) 4581, "Airports, flying fields, and Terminal Services", Sector S "Air Transportation Facilities."

The SWPPP is designed to assist the Airport in identifying potential sources of stormwater pollutants on Airport property and minimizing or eliminating the potential for those pollutants to enter stormwater discharges from the airport. The SWPPP describes the existing stormwater drainage system, identifies potential

pollutant sources and locations, and best management procedures (BMPs) and controls for the prevention of stormwater pollution, and establishes reporting and annual monitoring requirements.

MEPA 66 **The DEIR should use available water quality monitoring data from the Upper Gate and Lewis Ponds to demonstrate whether installed stormwater management systems are performing as designed in these areas.**

The Airport has completed additional sampling required for Upper Gate Pond and Lewis Pond. This is discussed on page 4 of the Phase I report, included in **Appendix Q**. The Airport's on-call environmental consultants have determined that sediment contamination is related to anthropogenic background conditions (i.e. those conditions of oil and/or hazardous material that would exist in the absence of the disposal site of concern which are ubiquitous and consistently present in the environment) and associated with the normal operation of a stormwater discharge outfall that is permitted and allowable by the EPA under the MSGP.

The Airport filed a Permanent Solution Statement with No Conditions in based on conversations with regulatory agencies and laboratory results in November 2023. Additionally, as indicated on page 6 of the Phase I report, testing of select monitoring wells that are in proximity to the Ponds did not indicate exceedances of the groundwater (Method 1 GW-1 or GW-3) standards for dissolved RCRA 8 metals (these eight metals include: arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver) or PAHs (polycyclic aromatic hydrocarbons (PAHs) are a class of chemicals that occur naturally in coal, crude oil, and gasoline) that you mentioned.

This confirms that the sediment impacts are not migrating to groundwater and site conditions and laboratory samples indicate that of normal operation of a stormwater discharge, meeting EPA standards with no RCRA 8 metals or PAHs present that exceed EPA standards.

MEPA 67 **The DEIR should provide updated wetlands calculations which reflect the most recent design of the project and identify all temporary and permanent impacts to wetland resource areas. … . It should provide an updated summary table of all wetland resource area and Buffer Zone impacts…. The DEIR should ensure that estimates for impacts to wetland resource areas are conservative and account for all temporary impacts.**

Wetland impacts consist of permanent fill of approximately 4,600 square feet (sf) of BVW, 13,700 sf Land Under Water (LUW), 300 linear feet of Inland Bank will occur as a result of the realignment of Taxiway D. These unavoidable impacts have been avoided and minimized to the maximum extent practicable through utilization of 2:1 side slope design with an engineered slope option.

Additional details on impacts are summarized in Table 6.1.2.2 and detailed in Figure 6.1-4.

MEPA 68 **The DEIR should demonstrate how the project will comply with performance standards outlined in the WPA for each resource area.**

Demonstration of compliance with performance standards is discussed in Chapter 8.0.

MEPA 69 **The DEIR should consider impacts associated with surface and subsurface hydrology, wildlife habitat, and describe compliance with BMPs for stormwater management and sedimentation and erosion control.**

Impacts to these categories are discussed in Chapter 6.0.

MEPA 70 **The DEIR should assess whether the taxiway relocation could be designed to avoid work within the wetland buffer, and if not, provide additional detail about potential mitigation.**

Taxiway D relocation requirements and alternatives are detailed in Section 4.1.2.1. Proposed wetland mitigation measures relative to impacts from Taxiway D are outlined in Section 6.1.4.

MEPA 71 **The DEIR should provide further detail on any proposed tree clearing, invasive species management and potential vernal pools across the project site.**

Details on tree clearing/land alteration are provided in Section 6.4.1.3. There are no vernal pools within the proposed project limits.

MEPA 72 **The DEIR is required to provide sufficient information to adequately describe cumulative impacts to "Waters of the Commonwealth" (BVW, Isolated Vegetated Wetland (IVW) and LUW) pursuant to 314 CMR 9.00 and identify efforts to avoid, minimize, and mitigate impacts.**

Impacts to water resources are discussed in Chapter 6.0. Impact quantities are summarized in Table 6.1.4 and detailed in Figure 6.2-1.

MEPA 73 **Impacts to IVWs that meet federal jurisdictional requirements defined at 33 CFR 328 through 329 are subject to review under 314 CMR 9.00. The DEIR should clarify if the project will impact IVW, and if yes, the DEIR should include a current Jurisdictional Determination from ACOE that verifies whether any or all the impacted IVWs are federal wetlands.**

No impacts to federally jurisdictional IVWs are anticipated. Discussion on jurisdiction of resource areas is provided in Section 6.1.

MEPA 74 **The DEIR should describe the volumes associated with proposed dredging and filling within Upper Gate Pond. The Proponent should review the requirements in 314 CMR 9.06 and determine whether a practicable alternative is available that has less adverse impact to the aquatic ecosystem. The alternatives analysis should include a thorough analysis to demonstrate why the geometry of certain elements cannot be modified to decrease wetland impacts.**

The three proposed alternatives for Taxiway D impact Upper Gate Pond. The proposed 4:1 side slope involves the greatest impact; the proposed 2:1 side slope involves less impact; and the proposed retaining wall involves the least impact and offers the least impact to the aquatic ecosystem.

Based on a conceptual design utilizing a 2 foot water depth and approximately 10 feet depth of muck the following table summarizes these impacts.

	Dredging (CY)	Fill (CY)
4:1 side slope:	9,600	11,500
2:1 side slope:	5,200	6,200
Retaining Wall:	2,900	3,500

Each of the runway and taxiway alternatives identified in the ENF must meet FAA design standards and safety guidelines as presented in Advisory Circular 150/5300-13B Airport Design for each of the runway and taxiway projects. The location, layout and orientation of all proposed improvements are already designed to the minimum FAA standards. These quantities are based on conceptual design and limited topographic data. Final quantities will be based on actual survey data.

MEPA 75 **The DEIR should propose appropriate mitigation measures to demonstrate consistency with the WQC regulations.**

Wetland mitigation measures are detailed in Section 6.1.5 and in Chapter 7.

MEPA 76 **The DEIR should commit to preparation and implementation of an archaeological site avoidance and protection plan (ASAPP) which describes how the archaeological sites will be protected and preserved from inadvertent construction-related impacts or future land use impacts. The ASAPP should be submitted to MHC for its review and comment.**

Preparation of the ASAPP is underway and being drafted by the Project's Cultural Resource personnel for submittal to the MHC for review and comment. Available documentation and mapping for the two significant ancient Native American sites have been reviewed by project archaeologist and field visits made to the locations of these sites, confirming that the sites are outside of proposed Project work areas.

The ASAPP will address Pre-Construction, Construction and Post-Construction Activities. Avoidance and protection measures will include installing high-visibility temporary fencing (i.e., orange construction fence) around and barring access to the two significant sites (sensitive cultural resource areas). Signs with *No Trespassing* will be posted along the fence to indicate that the sensitive cultural resource areas are off-limits. No access or impacts will be allowed within the fenced areas. Construction personnel and contractors will be instructed to neither perform nor permit any construction, excavation, grading, tree stumping, filling, dumping, or the storage or staging of equipment vehicles, or supplies within the boundaries of the fenced area. Trained cultural resource personnel will assist in facilitating the installation of protection measures (i.e., placement of fencing) with monitoring and/or flagging of the limits of the sensitive cultural resource areas. Cultural resource personnel will make field visits to ensure that the avoidance and protective measures are carried out as specified, with photographic documentation prior to, during and after construction. A pre-construction meeting will be held with Project personnel and contractors and cultural resource personnel to review these measures.

Cultural resource personnel will conduct a post-construction inspection immediately after the construction phase of the Project to evaluate the condition of the sensitive areas and determine whether or not project-related impacts had taken place within the protected areas. The findings of the inspection will be reported to the MHC and the FAA via a memorandum.

MEPA 77 **The DEIR should describe measures that will be implemented to avoid impacts to archaeological resources.**

The pre-construction activities will involve the following:

- Pre-construction site inspection;
- Photography;
- Construction personnel briefing; and
- High visibility fencing with No Trespassing signs around the sensitive cultural resource areas to be protected.

The construction activities will include avoidance of fenced sensitive site resource areas; and response, reporting, and corrective actions if these conditions are not met. The post-construction activities will include the following:

- Fence and sign removal;
- Post-construction site inspection;
- Photography; and
- Post-construction memorandum.

MEPA 78 **The DEIR should provide a summary of the outcome of any consultation with MHC.**

The Massachusetts Historical Commission (MHC) has reviewed the Project ENF and has the following comments and requests: Review of the MHC's Inventory of Historic and Archaeological Assets of the Commonwealth indicates that there are two significant ancient Native American sites (19-BN-827 and 19-BN-828) that are located on the airport grounds. It appears that these sites are not located within the direct project impact areas and can be protected and preserved from inadvertent construction-related damage or future land use damage through the development of an archaeological site avoidance and protection plan (ASAPP).

MHC requests that an ASAPP be prepared and implemented. The draft plan should be submitted to the MHC for review and comment. The MHC looks forward to consultation with the FAA in compliance with Section 106 of the National Historic Preservation Act (36 CFR 800) (MHC letter dated January 12, 2023).

MEPA 79 **The DEIR should estimate water use and wastewater generation associated with the terminal building expansion and any other activities that will increase water use.**

As the terminal building expansion has not yet been designed, nor size yet determined, an estimate of water use, and wastewater generation is not yet feasible.

MEPA 80 **The DEIR should describe the existing and proposed drinking water and wastewater facilities and review any capacity constraints.**

The Airport is on Town water and wastewater service.

MEPA 81 **The DEIR should identify opportunities for water conservation at the airport and associated facilities including water conserving plumbing and reuse of rainwater and greywater for irrigation.**

The Airport does not utilize irrigation.

All plumbing fixture water use is regulated by state law. An *Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy* was signed by Governor Baker on March 26, 2021. Energy and water efficiency standards for products were a key policy adopted in this bill. Massachusetts had standards for other products prior to the passage of the act, but the earlier standards were preempted by federal government regulations

The law bans the sale of plumbing fixtures that do not meet the water use conservation requirements. These requirements are prescribed in the Department of Energy Resources (DOER) *Guidelines for Implementing the Appliance Efficiency Standards* via 225 CMR 9.00.

Please see https://www.mass.gov/doc/225-cmr-9-appliance-energy-efficiency-standards-testing-and-certification-program/download

MEPA 82 **It should describe provisions for collecting wastewater containing extinguishing agents and measures for its treatment and/or disposal in accordance with applicable requirements.**

The Airport was the first airport in Massachusetts to purchase the ecologic unit to eliminate the need to use foam during annual firefighting equipment testing.

MEPA 83 **The DEIR should provide information responsive to the EPA Region 1 Sole Source Aquifer Project Review Information document to allow EPA to determine whether project construction and operation have the potential to contaminate the underlying aquifer.**

The Draft EA/EIR contains information responsive to requirements of EPA Sole Source Aquifer Review. A copy of this document will be sent to EPA for review and comment.

MEPA 84 **The DEIR should include information and analyses that provide delineation of the aquifer, description of groundwater flow, location of private and public water supply wells, identification of surface water discharges, management of stormwater and liquid and solid waste at the Airport, location of underground storage tanks (UST), and mitigation measures to minimize impacts to water quality.**

Existing groundwater conditions are provided in Section 5.4. Surface water discharges are identified on Figure 5.4-4. Location of USTs and mitigation measures are discussed in Section 5.17.

MEPA 85 **The DEIR should summarize the result of past (and current) groundwater monitoring conducted at or near the Airport. It should explain whether monitoring shows any adverse impacts to public water supplies and private wells associated with airport activities.**

The Airport continues to monitor PFAS concentrations in groundwater at and downgradient of the capped areas to measure their effectiveness. These results are presented every 6 months in status reports submitted to MassDEP. Please see Section 5.17.3 for a detailed discussion.

MEPA 86 **The DEIR should describe the Proponent's coordination with the local Water Department and Board of Health based on the proximity of private wells.**

The Town of Barnstable's Water Supply Division and Board of Health have been included in the Project's Draft EA/Draft EIR Circulation List (Appendix P) to provide each department with any opportunity to provide comments on relevant sections of the report to be addressed in the final EA/EIR.

MEPA 87 **The DEIR should identify the project site's vulnerabilities to climate change and potential features incorporated into the design of the project that will increase the resiliency of the site to likely climate change impacts.**

See Section 5.7,*Climate Resiliency and Greenhouse Gas Emissions*

MEPA 88 **I encourage the Proponent to consult the data available from the Town of Barnstable, the Cape Cod Commission, and the resilientMA.org website to develop climate change scenarios for the site and identify potential adaptation measures.**

See Section 5.7, for details on climate change scenarios for the site and potential adaptation measures.

MEPA 89 **The Proponent should consult with the Town regarding the findings of its community resilience workshops, including priority hazards, vulnerabilities, strengths, and actions. The DEIR should provide a review of the Town's studies and resiliency plans on climate vulnerabilities and potential solutions, including regional solutions requiring coordination between the Proponent and abutters and other stakeholders.**

Section 6.4.2 identifies findings detailed in the Town's studies and measures to be implemented to meet climate resiliency. Additionally, Section 6.4 provides information on the microgrid technology currently in the planning phase at the Airport.

MEPA 90 **The DEIR should include a comprehensive discussion of the potential effects of climate change on the project site and describe features incorporated into the project design (including climate-related design specifications and standards) that will increase the resiliency of the site to these changes.**

See mitigation/adaptation measures in Section 6.4.

MEPA 91 **The DEIR should include information about the potential adaptation of the project to future conditions.**

See response to MEPA # 89

MEPA 92 **The DEIR should describe the precipitation data used for the design of the stormwater management system. The DEIR should discuss how the stormwater system will be sized to address future climate conditions.**

All new projects will be designed to meet MassDEP stormwater standards at the time of design. With regards to future climate conditions, each project will be designed utilizing current stormwater design principles in place at the time of design.

MEPA 93 **The DEIR should discuss whether the proposed stormwater design will accommodate the recommended 2070 100-year return period (24-hour rainfall volume of 11.0 inches) from the Tool, as well as the 2050 recommendation for runway and taxiway areas corresponding to the 10-year return period as of 2050 (24-hour rainfall volume of 6.1 inches).**

To the extent practicable and affordable, the proposed stormwater design will utilize the recommended 2070 100-yr return period corresponding to the 24-hour rainfall of 11.0 inches as well as the 2050 recommendation for runway and taxiways corresponding to the 10-yr 24 hour rainfall volume of 6.1 inches.

All new projects will be designed to meet MassDEP stormwater standards including calculations for the attenuation of peak flows and pollutant loading requirements in place at the time each project is implemented.

MEPA 94 **The DEIR should discuss whether the stormwater management system will attenuate peak flows and meet pollutant loading requirements based on future climate conditions in 2050 and 2070 and should provide a copy of the Stormwater Report for the project. Estimates can be provided in lieu of exact calculations, to the extent stormwater design is not advanced enough by the time of the DEIR.**

All new projects will be designed to meet MassDEP stormwater standards including calculations for the attenuation of peak flows and pollutant loading requirements in place at the time each project is implemented.

The designs will be initiated under a permitting effort for each specific project. The final design process will develop a stormwater management report that will provide a management plan that will demonstrate attenuation of the peak flows and will meet pollutant loading requirements in place at the time of final design.

A copy of the final Stormwater Report for each project will be provided to DEP during the design phase for each project.

MEPA 95 **The DEIR should discuss whether the elevation of the terminal building is anticipated to be resilient to flood elevations at the site associated with future storm scenarios such as the 10-year, 25-year, and 50-year storms as of 2070. The**

project site is located outside of the 100-year floodplain; however, a small section of forested area near Mary Dunn Pond, within the Airport property, is within the 500-year floodplain.

Please note, the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (25001C0566J, effective on 07/16/2014 and 25001C0567J, effective on 07/16/2014) show the Airport is within Zone X, an area of minimal flood hazard determined to be outside the 500-year flood (see Figure 5.4-3).

The Airport property is not at a high risk of flooding. A small amount of forested area near Mary Dunn Pond, within the Airport property boundary but outside the Project Area, is within an area with a 0.2 percent annual chance of flood hazard.

MEPA 96 **The DEIR should provide information on any base flood elevations that have been established for adjacent areas, and discuss how the proposed building elevation compares to existing BFEs and whether it is likely to accommodate storm conditions based on future storm scenarios.**

The Flood Insurance Rate Maps for Barnstable indicates that the existing terminal building and surrounding buildings including proposed hangar developments along both runways are not within any flood hazard areas. There is no base flood elevation available on record; and any proposed development is not anticipated to be within any flood hazard area.

MEPA 97 **To the extent the project is unable to accommodate future year storm scenarios, the DEIR should discuss whether the project has engaged in flexible adaptative strategies, and whether current designs allow for future upgrades to be made to adapt to climate change.**

The ability to accommodate future year storm scenarios will be investigated during the permitting phase, as design is only at a conceptual stage. Please refer to Section 6.1.2.1 for additional details.

MEPA 98 **This project is subject to review under the May 5, 2010, MEPA GHG Policy, which requires Proponents to quantify carbon dioxide (CO2) emissions and identify measures to avoid, minimize or mitigate such emissions. The analysis should quantify the direct and indirect CO2 emissions of the project's energy use (stationary sources) and transportation-related emissions (mobile sources). Direct emissions include on-site stationary sources, which typically emit GHGs by burning fossil fuel for heat, hot water, steam and other processes. Indirect emissions result from the consumption of energy, such as electricity, that is generated off-site by burning fossil fuels, and from emissions from vehicles used by employees, vendors, customers and others.**

The number of new vehicle trips associated with the terminal expansion are presented in Section 6.8.2. These trips can be utilized to develop estimates of mobile source emissions, however, given the rapid transition to electric vehicles, with all leading automobile manufactures discounting internal combusting engine (ICE) technology, and the timeframe of the Airport's Master Plan project (from 2024 to 2040), the Project assumes that the projection of emissions from mobile and stationary sources emissions will be effectively zero.

MEPA 99 **The DEIR should include a GHG analysis for stationary sources prepared in accordance with the GHG Policy, guidance provided in the comment letter submitted by the Massachusetts Department of Energy Resources (DOER), which is incorporated in this Certificate in its entirety, and this Scope.**

Please refer to Section 6.5 Climate and Greenhouse Gas Emissions.

MEPA 100 **For the terminal expansion project, the DEIR should include an analysis that calculates and compares GHG emissions associated with a Base Case and a Preferred Alternative that achieves greater reductions in GHG emissions. Hyannis, which is located within Barnstable, is not a stretch code community. Baseline for this project, therefore, would be Massachusetts base code.**

Please refer to Section 6.4 Climate and Greenhouse Gas Emissions and the discussion pertaining to the Airport's commitment to meet the new stretch code requirements for any terminal or building improvements.

MEPA 101 **However, because the updated code contains numerous provisions which deliver emissions reductions, DOER comments recommend that the project, as a mitigation measure, follow the provisions of the July 2023 stretch code for the proposed expansion.**

A GHG Analysis on Stationary Sources and mitigation is provided in section 6.4.1.2.

MEPA 102 **In addition, DOER recommends that the project adopt, as a mitigation measure, efficient electric space and water heating.**

Stationary source mitigation measures are provided in section 6.4.1.2.

MEPA 103 **The DEIR should identify the model used to analyze GHG emissions, clearly state modeling assumptions, explicitly note which GHG reduction measures have been modeled, and identify whether certain building design or operational GHG reduction measures will be mandated by the Proponent to future occupants or merely encouraged for adoption and implementation.**

Estimates of GHG emissions, modeling, and assumptions are detailed in Section 6.4.1

MEPA 104 **The DEIR should include the modeling printouts for each alternative and emission tables that compare base case emissions in tons per year (tpy) with the Preferred Alternative showing the anticipated reduction in tpy and percentage by emissions source.**

The Airport is committing to adopt the 2023 Stretch Energy Code measures, and In lieu of modeling, a series of GHG mitigation commitments is proposed.

MEPA 105 **The DEIR should present an evaluation of mitigation measures and recommendations identified in DOER's comment letter. In particular, the feasibility of each of the mitigation measures outlined below should be assessed for the building expansion, and if feasible, GHG emissions reduction potential associated with major mitigation elements should be evaluated to assess the relative benefits of each measure.**

See Section 6.4.1.2 for GHG Mitigation Commitments.

MEPA 106 **The DEIR should present an evaluation of mitigation measures and recommendations identified in DOER's comment letter. In particular, the feasibility of each of the mitigation measures outlined below should be assessed for the building expansion, and if feasible, GHG emissions reduction potential associated with major mitigation elements should be evaluated to assess the relative benefits of each measure.**

See Section 6.4.1.2.

MEPA 107 **If financially infeasible, the DEIR should describe the cost effectiveness metrics that were used to evaluate feasibility, whether energy savings that would accrue to future tenants were considered, and what "payback period" the Proponent would deem to be reasonable given the financial constraints identified. It should include a review of available financial incentives potentially available for the project, as described in DOER's comment letter.**

Please see response to MEPA #12

MEPA 108 **At a minimum, the DEIR should consider the following GHG mitigation measures:**

- **Building design and construction practices that result in low heating and cooling thermal energy demand intensity (TEDI) by maintaining envelope integrity with framed, insulated walls with continuous insulation, minimizing glazed wall systems (e.g., curtain walls), low air infiltration (confirmed with in-building testing), eliminating thermal bridging, ventilation energy recovery and management of solar heat gains**

- **Minimizing glass curtain wall assemblies and excessive windows**

- **Efficient electrification of space heating with either full electrification of space heating with air source heat pumps (ASHPs), or, for highly ventilated buildings, a hybrid of air source space heating for primary heating and gas space heating for secondary heating**
- **Efficient electrification of water heating with ASHPs**
- **Maximized rooftop solar-readiness (at least 80%) and installed PV**
- **Maximized electric vehicle (EV) charging equipment (10-15% of spaces) and EV ready spaces (20-25% of spaces)**

The Airport is committing to a series of GHG mitigation commitments. For any new buildings, expansions, or additions, the Proponent will commit to:

- High performing envelope that complies with the 2023 Stretch code envelope performance requirements;
- 100% heat pump space heating;
- Energy recovery ventilation per the 2023 Stretch code update;
- Electric domestic hot water heating, specific method to be determined. Heat pump domestic hot water heating to be analyzed;
- Roof to be constructed PV-ready;
- Installed electric vehicle (EV) charging space,;
- EV infrastructure for additional future EV-parking spaces to be installed, quantity to be determined.

Should any future Energy Code Updates occur prior to the commencement of work, the Project will comply with future Energy Code Updates.

MEPA 109 **The DEIR should review transportation-related emissions associated with vehicular trips to and from the Airport resulting from the proposed improvements to support future airport growth and identify any Transportation Demand Management (TDM) measures implemented by the Airport to minimize single occupancy vehicle trips to and from the site including promotion of alternative modes of travel.**

Please see response to MEPA # 33.

MEPA 110 **It should review measures to promote the use of low-emissions vehicles.**

As noted in the Transportation Section of the draft EA/EIR, the Massachusetts Department of Transportation Aeronautics Division received a $1.95 million grant award from the U.S. Department of Transportation's Strengthening Mobility and Revolutionizing Transportation (SMART) Program for the planning of the smart microgrid at the Airport to generate and distribute clean, reliable energy.

Energy created from the smart grid would support electric ground vehicles, including buses, and in the future, electric aircraft. This project is In collaboration with the airport and the Cape Cod Regional Transit Authority (CCRTA) to support the transportation options of the community living in the area.

MEPA 111 **The DEIR should describe the number of EV charging stations that will be installed and commit to providing designated parking spaces for these vehicles.**

A total of eight (8) EV charging stations will be installed by the Airport.

MEPA 112 **It should provide additional information regarding implementation of electric aircraft charging stations.**

Additional information on implementation of electric aircraft charging stations is still preliminary. While locations are identified on the Airport's terminal ramp, specific technologies would be identified as part of the newly awarded smart grid planning project.

MEPA 113 **The project will alter ±63 acres of land, though the extent of tree clearing is not quantified in the ENF. In addition, tree clearing will occur on easements outside of the Airport property. The DEIR should identify the total areal extent of proposed tree clearing on-site and off-site.**

The only currently foreseeable off-site impact may be associated with possible obstruction removal in a runway approach area and/or RPZ, this can be verified with a future tree-top canopy mapping effort. At this time, it does not appear that any offsite tree clearing is necessary. There is a very small amount in the Runway 33 approach which is located on airport property. On site tree clearing is estimated at 7.07 ac. See Table 6.4.-2 for more details.

MEPA 114 **The Proponent should consult with the MEPA Office on the development of a carbon analysis for tree clearing activities. To the extent the degree of tree removal is substantial as determined in consultation with the MEPA Office, the DEIR should develop a methodology to develop the analysis, identify associated impacts on GHG emissions, and identify measures to avoid, minimize and mitigate impacts. The DEIR should provide a quantitative carbon analysis of tree clearing**

activities that should consider both the one-time direct emissions from tree cutting as well as loss of potential carbon sequestration over a certain time period (e.g., 30 or 40 years).

Pease see carbon analysis in Section 6.4.1.4 and 6.4.1.5.

MEPA 115 **The DEIR should account for carbon sequestration from any trees that are removed and not replaced/converted to scrub shrub.**

Pease see response to MEPA #114.

MEPA 116 **I expect the DEIR to identify significant mitigation measures commensurate with the project's impacts on the site's capacity to sequester and store carbon. Potential mitigation measures may include funding programs that add or maintain biomass for sequestration purposes (such as tree planting, carbon credits, forest conservation or commitments to implement forest restoration practices) and preserving/protecting forested land through a Conservation Restriction or other means.**

Carbon offsets and future forest preservation are discussed in Section 6.4.1.5.

MEPA 117 **The DEIR should clearly explain the Proponent's plan for disposition of the trees cleared through the project, including the process for identifying potential markets for reuse of wood. The Proponent should commit to reuse of cleared trees for long-lived wood products to the greatest extent practicable and should indicate how the ultimate disposition of the trees will be tracked and documented.**

Pease see carbon analysis in Section 6.4.1.5.

MEPA 118 **The DEIR should describe if proposed improvements will be located within any of the disposal sites previously or currently regulated under the MCP. The DEIR should include a plan that clearly identifies the location of disposal sites and project elements. It should describe if conditions associated with any disposal sites may require remedial measures in the areas where proposed improvements will occur.**

This item is addressed in Section 6.13 for sites regulated under the MCP.

MEPA 119 **The DEIR should describe any potential excavation or disturbance in disposal sites and identify any necessary mitigation measures or handling and disposal requirements.**

Details regarding potential disturbance within disposal sites are discussed in Section 6.13.

MEPA 120 **The DEIR should comprehensively respond to MassDEP comments regarding preparation of a Release Abatement Measure (RAM) Plan, prior to construction, for Taxiway B Potential Aviation Development Area, Taxiway A Potential Aviation Development Area, and Proposed Building near the Terminal Ramp and North Ramp including. As requested in greater detail in MassDEP comments, the RAM Plan should describe sampling and analysis of soil and asphalt for the presence of PFAS and managing PFAS-contaminated soil and asphalt in Taxiway A and Taxiway B development areas.**

The Airport will maintain the existing monitoring wells to the extent feasible. Wells that cannot be maintained due to their location with respect to improvement effort will be decommissioned in accordance with MassDEP requirements and replaced, if necessary.

MEPA 121 **The DEIR should confirm if a RAM Plan will be required under 310 CMR 40.0000 based on review of this development by a Licensed Site Professional (LSP).**

This item is addressed in Section 6.13.

MEPA 122 **The DEIR should confirm that existing monitoring wells will be maintained for future assessment of groundwater for PFAS, 1,4-dioxane, and potentially other contaminants, otherwise, replacement wells will be installed.**

The Airport will maintain the existing monitoring wells to the extent feasible. Wells that cannot be maintained due to their location with respect to improvement effort will be decommissioned in accordance with MassDEP requirements and replaced, if necessary.

MEPA 123 **The DEIR should describe if project activities will be located within areas where PFAS or firefighting foam has been used.**

Section 6.13 identifies the projects that may occur within areas where PFAS has been identified.

MEPA 124 **The DEIR should include an update on the Proponent's ongoing coordination with MassDEP regarding locations where firefighting foam has been used and its potential to be a source of PFAS.**

This item is addressed in Section 5.17.3.

MEPA 125 **The DEIR should describe any areas to be excavated that may contain soil or groundwater contaminated by PFAS and describe necessary mitigation measures.**

This item is addressed in Section 6.13.1.

MEPA 126 **The DEIR should describe if the Proponent plans to test soils in these areas prior to construction, characterize soil with respect to PFAS contamination and, if necessary, maintain a pavement cover over any contaminated areas.**

See Section 6.13.9 for project related hazardous materials, solid waste, and pollution prevention measures.

MEPA 127 **The DEIR should provide an estimate of the volume of material to be excavated.**

The estimated volume of material to be excavated for the Runway preferred alternative and for Taxiway A, Taxiway B and Taxiway D are based on conceptual (25%) design drawings. Below are estimated volumes for each of the proposed projects. These are estimated volumes only and will change based on future preliminary and final designs for each individual project.

Project	Estimated Excavation Volume (CY)
Runway 15-33 AMPU Preferred Alternative	160,900
Runway 15-33 Alternate 1	106,100
Runway 15-33 Alternate 2	267,000
Taxiway B	11,300
Taxiway D w/4:1 Side Slope	70,900
Taxiway D w/2:1 Side Slope	66,000
Taxiway D w/Retaining Wall	63,600

MEPA 128 **Based on the Proponent's review of disposal sites at the Airport and potential areas where PFAS may have been released, the DEIR should identify the presence of soil and/or groundwater contaminants in the areas where excavation is proposed.**

This item is addressed in Section 6.13.

MEPA 129 **It should estimate the volume of contaminated material, review testing, treatment and disposal options and identify construction-period mitigation measures to minimize impacts to public health and the environment associated with the excavation and handling of contaminated soil.**

This item is addressed in Section 6.13.9

MEPA 130 **The Proponent should work with MassDEP to resolve any issues regarding PFAS before conducting any work for the project.**

The Airport will continue to address issues regarding PFAS in accordance with the requirements of the MCP (310 CMR 40.0000).

MEPA 131 **The DEIR should discuss any generation of hazardous waste and/or waste oil at the Airport and identify potential measures to reduce, recover and reuse hazardous waste.**

This item is addressed in Section 5.17.

MEPA 132 **The DEIR should describe implementation of a spills contingency plan that addresses prevention and management of potential releases of OHM from pre- and post-construction activities and will be presented to workers at the site and enforced.**

This item is addressed in Section 5.17.

MEPA 133 **The plan should include but not be limited to, refueling of machinery, storage of fuels, and potential on-site activity releases.**

This item is addressed in 5.17.

MEPA 134 **The DEIR should identify the nature and volume of solid waste to be generated by the project. It should describe handling, reuse, recycling and disposal of solid waste.**

The project is not able to estimate volumes of solid waste volumes at this stage. All solid waste handling, reuse, recycling and disposal will be conducted in compliance with applicable laws and C&D regulations.

MEPA 135 **The Proponent should review MassDEP's comment letter for solid waste handling and disposal requirements. The DEIR should describe how the project will comply with all applicable requirements.**

This item is addressed in Section 6.13.

MEPA 136 **The DEIR should describe how construction activities will be managed in accordance with applicable MassDEP regulations regarding Air Pollution Control (310 CMR 7.01, 7.09-7.10), and Solid Waste Facilities (310 CMR 16.00 and 310 CMR 19.00, including the waste ban provision at 310 CMR 19.017).**

This item is addressed in Section 6.13.8.

MEPA 137 **The DEIR should describe all construction-period impacts and mitigation relative to wetlands, stormwater, noise, air quality, water quality, and traffic. It should describe truck routes and other mitigation measures that may be implemented to minimize impacts to residential areas by trucks travelling to the site during the construction period.**

Construction period impacts and mitigation measures are described in Chapter 6.0 and summarized in Tables 7.3-1 and 7.3-2. While none of the proposed projects have been progressed past conceptual design, future projects will include a detailed description and graphical depiction of proposed truck routes, construction-period impacts, and proposed mitigation relative to wetlands, stormwater, noise, air quality, water quality, and traffic commensurate with the commitments made in this document.

MEPA 138 **Construction equipment should use engines meeting Tier 4 federal emissions standards, or if unavailable, confirm that the project will require its construction contractors to use Ultra Low Sulfur Diesel fuel, and discuss the use of after-engine emissions controls, such as oxidation catalysts or diesel particulate filters.**

Construction Impacts and mitigation relative to air quality is discussed in Section 6.3.3. See Table 7.3-2 for construction related mitigation commitments.

MEPA 139 **The DEIR should provide detailed information regarding the project's generation, handling, recycling, and disposal of construction and demolition debris (C&D) and identify measures to reduce solid waste generated by the project. I strongly encourage the Proponent to commit to C&D recycling activities as a sustainable measure for the project. The Proponent is reminded that any contaminated material encountered during construction must be managed in accordance with the MCP and with prior notification to MassDEP.**

This item is addressed in Section 6.13.8.

MEPA 140 **The project will be required to develop a Stormwater Pollution Prevention Plan (SWPPP) in accordance with its NPDES CGP to manage stormwater during the construction period.**

Each project will submit a Notice of Intent and develop a construction period SWPPP in accordance with the most current NPDES CGP. See Section 6.1.3.

MEPA 141 **The DEIR should describe stormwater management measures that will be implemented during construction. It should describe potential construction period dewatering activities and associated permitting (i.e., NPDES) and identify mitigation measures.**

See Section 6.1 and Chapter 7.0 Mitigation and Draft Section 61 findings.

MEPA 142 **All construction-period mitigation measures should be listed in the draft Section 61 Findings. I refer the Proponent to the comprehensive review of construction-period regulatory requirements in MassDEP's letter. The DEIR should describe how the project will comply with all applicable requirements.**

See Chapter 7.0 Mitigation and Draft Section 61 findings and Tables 7.3-1 and 7.3-2.

MEPA 143 **The DEIR should include a separate chapter summarizing proposed mitigation measures including construction-period measures. This chapter should also include a comprehensive list of all commitments made by the Proponent to avoid, minimize and mitigate the environmental and related public health impacts of the project, and should include a separate section outlining mitigation commitments relative to EJ populations.**

See Chapter 7.0 Mitigation and Draft Section 61 findings.

MEPA 144 **The DEIR should include a commitment to provide a GHG self-certification to the MEPA Office upon expansion of the terminal building signed by an appropriate professional indicating that all of the GHG mitigation measures, or equivalent measures that are designed to collectively achieve identified reductions in stationary source GHG emission and transportation-related measures, have been incorporated into the project.**

Pease see MEPA #12.

MEPA 145 **The DEIR should contain a copy of this Certificate and a copy of each comment letter received. It should include a comprehensive response to comments on the DEIR that specifically address each issue raised in the comment letter; references to a chapter or sections of the DEIR alone are not adequate and should only be used, with reference to specific page numbers, to support a direct response.**

A copy of the Certificate and each comment letter received is provided in **Appendix A.** Additionally responses are provided in this Chapter 10 Response to Comments.

MEPA 146 **In accordance with 301 CMR 11.16, the Proponent should circulate the DEIR to each Person or Agency who commented on the ENF, each Agency from which the project will seek Permits, Land Transfers or Financial Assistance, and to any other Agency or Person identified in the Scope. Pursuant to 301 CMR 11.16(5), the Proponent may circulate copies of the DEIR to commenters in a digital format (e.g., CD-ROM, USB drive) or post to an online website.**

A circulation list is provided in Appendix P.

MASSACHUSETTS HISTORICAL COMMISSION (MHC)

MHC 01 **It appears that these sites are not located within the direct project impact areas and could be protected and preserved from inadvertent construction-related damage or future land use damage through the development of an archaeological site avoidance and protection plan (ASAPP). MHC requests that an ASAPP be prepared and implemented. The draft plan should be submitted to the MHC for review and comment.**

Please refer to the responses to MEPA #76 and #77.

MHC 02 **The MHC looks forward to consultation with the FAA in compliance with Section 106 of the National Historic Preservation Act (36 CFR 800).**

Comment noted. The proposed Projects will undergo consultation with MHC in compliance with Section 106 of the National Historic Preservation Act.

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (MASSDEP) –SOUTHEAST REGIONAL OFFICE (SERO)

DEP 01 **The Project will require a Superseding Order of Conditions from the Department or a Final Order of Conditions from the local Conservation Commission before any activity commences.**

Comment noted. A Superseding Order of Conditions from the Department or a Final Order of Conditions from the local Conservation Commission will be received before any activity commences.

DEP 02 **An alternative analysis that demonstrates measures taken to avoid, minimize and mitigate for the dredging and fill must be submitted with the 401 Water Quality Certificate application.**

Future permit applications for the 401 Water Quality Certificate will include a detailed alternatives analysis. A summary alternatives analysis is provided in Chapter 4.0 relative to Taxiway D.

DEP 03 **The Project will result in approximately 21 acres of new impervious area, and as such, the Project is subject to the Stormwater Regulations at [310 CMR 10.05(6)(k)-(q)] and [314 CMR 9.06 (6)(a)-(f)]. According to the ENF, stormwater management for the proposed individual projects will comply with these regulations. The Stormwater Report will be reviewed by the Department as part of the NOI filing.**

A Stormwater Management required by specific project(s) will be prepared in accordance with MassDEP requirements and will be reviewed by MassDEP. Further, the projects will conform to 310 CMR 10.05 (6) regarding Orders of Conditions Regulating Work and Orders of Resource Area Delineation and 314 CMR 9.06 regarding Stormwater Discharges.

DEP 04 **The Project Proponent acknowledges its permitting coverage under National Pollutant Discharge Elimination System (NPDES) Construction Activities Permit under the Clean Water Act. The Project Proponent is advised it is illegal to discharge any pollutants to navigable waters of the United States from a point source unless the discharge is authorized by a National Pollutants Discharge Elimination System (NPDES) permit.**

Each project will submit a Notice of Intent and develop a construction period SWPPP in accordance with the most current NPDES CGP. See Chapter 8 - Regulatory Compliance.

DEP 05 **The stormwater section of the ENF does not know acknowledge states that the Project Proponent may require an EPA NPDES Multi Sector General Permit (Industrial Stormwater) Program (https://www.epa.gov/sites/production/files/2016-04/documents/sectors airtransmaint.pdf). Based on the Department's investigation, the Project Proponent is operating without the required permit that falls under the requirements of Sector S Vehicle Maintenance Areas, Equipment Cleaning Areas, or Deicing Areas located at Air Transportation Facilities.**

The Airport obtained MSGP coverage in 2021. A copy of the permit and supporting SWPPP is provided in **Appendix L.**

DEP 06 **The Proponent is advised in the event that the conveyances of stormwater through underground infiltration structures are planned that they are subject to the jurisdiction of the MassDEP Underground Injection Control (UIC) program. These structures must be registered with Mass UIC program through the submittal of a BRP WS-06 UIC Registration application through MassDEP's electronic filing system, eDEP. The statewide UIC program contact is Joe Cerutti, can be reached at (617) 292-5859 or at joseph.cerutti@state.ma.us . All information regarding online (eDEP) UIC registration applications may be obtained at the following web page under the category "Applications & Forms": https://www.mass.gov/underground-injection-control-uic.**

Each underground infiltration structure will be registered in accordance with the UIC program.

DEP 07 **Waste Water Management. Cape Cod Gateway Airport is required to demonstrate the ability to apply extinguishing agent as part of its FAA Part 139 safety certification. The capital improvements to the airport should include provisions to collect the wastewater containing the extinguishing agents generated during these demonstrations and/or training events so that proper treatment and/or disposal can occur in conformance with Massachusetts requirements.**

An ecologic cart is used for testing firefighting equipment to ensure that it is operational. Use of this cart prevents its release of foam into the environment. The Airport was the first airport in the Commonwealth to obtain such a cart in 2018.

DEP 08 **a. Prior to the anticipated construction activities, a MassDEP Release Abatement Measure (RAM) Plan should be submitted for the following areas:**

1. Taxiway B "Potential Aviation Development Area"

1. Based on a review of the Phase II for the Cape Cod Gateway Airport, some areas were not previously sampled for PFAS including the area under Taxiway B. The RAM should include a plan to sample and analyze soil beneath Taxiway B during airport upgrades for the presence of PFAS. The RAM shall also describe how the PFAS- containing soil, if detected, will be properly managed and discuss whether this finding affects the remediation options under R TN 4-002634 7.

2. The "Potential Aviation Development Area" along Taxiway B coincides with the asphalt caps located at the ARFF area and the Deployment area. These caps were installed to mitigate the leaching of PFAS from the soil to the groundwater. Any asphalt removed from the taxiway, including the capped area, should be sampled/analyzed for PFAS and managed appropriately if PF AS is found to be present. Furthermore, the RAM Plan should also include provisions to manage any PFAS-contaminated soils encountered under the cap.

3. The RAM Plan shall describe how the caps' integrity will be maintained during and after construction. The RAM Plan shall include a plan to replace the caps if the integrity of the caps cannot be maintained.

4. The RAM should also include a plan to sample the asphalt from both the taxiway and the asphalt caps for PF AS and, if detected, the RAM Plan shall describe how the asphalt will be managed.

This item is addressed in in Section 6.13. Pending the project sequencing, the work will be performed under the Preliminary Response Action or Comprehensive Response Action provisions of the MCP, as applicable.

DEP 09 **11. Taxiway A "Potential Aviation Development Area"**

1. **Available records in MassDEP's files indicate that the 1991 drill location, located near the north end of Taxiway A, had documented use of AFFF. The area abutting the 1991 drill location is slated as "Potential Aviation Development Area". When development begins here, the RAM shall include a plan to sample disturbed soil in areas not previously sampled/analyzed. Further, the RAM Plan shall include the requirements for proper soil management if PFAS is detected.**

This item is addressed in in Section 6.13. When development begins for Taxiway A, MCP submittals will include a plan to sample and test disturbed soil in areas not previously sampled for PFAS. Further, this submittal will describe how PFAS-containing soils will be managed, if identified.

At this time, it is anticipated that soil will either be reused on-site during construction, stockpiled in accordance with the MCP for future reuse, or transported offsite for reuse, recycling, or disposal. While it is not expected that significant groundwater management will be encountered as part of this project, if groundwater is encountered it will either be recharged in accordance with local, state, and federal regulations, treated and discharged to surface water in accordance with requirements of the NPDES DRGP, or collected and transported offsite for disposal.

DEP 10 **"Proposed Building" near the Terminal Ramp and North Ramp Some development is proposed within the disposal site boundary for R TN 4-0000823. The LSP should review the anticipated development to determine if a RAM Plan is required under 310 CMR 40.0000.**

This item is addressed in Section 6.13.

DEP 11 **Existing monitoring wells should be maintained for future assessment of groundwater for PF AS, 1,4-dioxane, and potentially other contaminants. If the wells cannot be maintained, then replacement wells should be installed.**

This item is addressed in Section 6.13. The Airport will maintain the existing monitoring wells to the extent feasible. Wells that cannot be maintained due to their location with respect to improvement effort will be decommissioned in accordance with MassDEP requirements and replaced, if necessary.

DEP 12 **Spills Prevention Control. A spills contingency plan addressing prevention and management of potential releases of oil and/or hazardous materials from pre- and post-construction activities should be presented to workers at the site and enforced. The plan should include but not be limited to, refueling of machinery, storage of fuels, and potential on-site activity releases.**

In accordance with Code of Federal Regulations 40, Subpart 112 (40 CFR 112), a Spill Prevention, Control, and Countermeasure Plan (SPCCP) is maintained by the Airport to minimize the risk associated with bulk storage and transfer of Oil and Hazardous Materials (OHM). The Airport also maintains a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the U.S. EPA National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity. Copies of the SWPPP and SPCC plans are attached in **Appendices L and M** respectively.

DEP 13 **Air Quality. Construction and operation activities shall not cause or contribute to a condition of air pollution due to dust, odor or noise. To determine the appropriate requirements please refer to:**

310 CMR 7 .09 Dust, Odor, Construction, and Demolition

310 CMR 7.10 Noise

Please refer to Table 7.3-1 for air quality measures to be implemented to mitigate the effects of the Project.

DEP 14 **MassDEP requests that all non-road diesel equipment rated 50 horsepower or greater meet EPA 's Tier 4 emission limits, which are the most stringent emission standards currently available for off-road engines. If a piece of equipment is not available in the Tier 4 configuration, then the Proponent should use construction equipment that has been retrofitted with appropriate emissions reduction equipment.**

Please see response to DEP #13

DEP 15 **MassDEP reminds the Proponent that unnecessary idling (i.e., in excess of five minutes), with limited exception, is not permitted during the construction and operations phase of the Project (Section 7 .11 of 310 CMR 7 .00). Regarding construction period activity, typical methods of reducing idling include driver training, periodic inspections by site supervisors, and posting signage. In addition, to ensure compliance with this regulation once the Project is occupied, MassDEP requests that the Proponent install permanent signs limiting idling to five minutes or less on-site.**

Please see response to DEP #13

DEP 16 **Hazardous Waste Management. If any occupant of the Project generates hazardous waste and/or waste oil, that entity must register with the MassDEP or EPA to obtain a permanent identification number, as applicable, in accordance with 310 CMR 30.000 for legally generating and managing regulated waste.**

In accordance with Code of Federal Regulations 40, Subpart 112 (40 CFR 112), a Spill Prevention, Control, and Countermeasure Plan (SPCCP) is maintained by the Airport to minimize the risk associated with bulk storage and transfer of Oil and Hazardous Materials (OHM).

DEP 17 **Source reduction, recovery, and reuse are recommended to significantly decrease or eliminate airport waste as well as an airport's operation costs for treatment and/or disposal. To determine the potential saving of these operational costs, a study should be made of all the airport's industrial and hazardous waste management. When completed this study would monitor inventory, pollutant streams, and ultimately how to maximize the potential to reduce pollutant**

loading/toxicity and how to reuse/recycle to the maximum extent feasible while complying with all requirements on a regular cycle for evaluation and permit re authorization.

This item is addressed in Section 6.13.8.

DEP 18 **MassDEP requests that the Proponent state specifically how the Proponent plans to address the Department's solid waste regulations concerning the disposal of materials resulting from proposed roadway work resulting from the proposed CWMP roadway-related construction.**

This item is addressed in Section 6.13.8.

DEP 19 **Compliance with Waste Ban Regulations: Waste materials discovered during construction (e.g., metal, asphalt, brick, and concrete) shall be disposed, recycled, and/or otherwise handled in accordance with the Solid Waste Regulations including 310 CMR 19.017: Waste Bans.**

The Airport ensures compliance with all applicable state regulations, including 310 CMR 19.017 through the contracting process. In addition, the Airport maintains its own "Guidelines for Construction and Alteration at Cape Cod Gateway" that are referenced in the construction contracts.

DEP 20 **MassDEP recommends the Proponent consider source separation or separating different recyclable materials at the job site. Source separation may lead to higher recycling rates and lower recycling costs. Further guidance can be found at:**

https://recyclingworksma.com/construction-demolition-materials-guidance/

The Proponent will consider incorporation of source separation in its contract language.

DEP 21 **Asphalt, brick, and concrete (ABC) rubble, such as the rubble generated during construction must be handled in accordance with the Solid Waste regulations. These regulations allow, and MassDEP encourages, the recycling/reuse of ABC rubble. The Proponent should refer to MassDEP's Information Sheet, entitled" Using or Processing Asphalt Pavement, Brick and Concrete Rubble, Updated February 27, 2017 ", that answers commonly asked questions about ABC rubble and identifies the provisions of the solid waste regulations that pertain to recycling/reusing ABC rubble.**

The Proponent routinely recycles asphalt millings and stockpiles for future use, as evidenced by the recent Runway 6-24 project during Summer 2023. To the maximum extent possible, that will be incorporated into these Project construction contract requirements as well.

DEP 22 **The Proponent should be aware that wood is not allowed to be buried or disposed of at the Site pursuant to 310 CMR 16.00 & 310 CMR 19.000 unless otherwise approved by MassDEP. Clean wood may be handled in accordance with 310 CMR 16.03(2)(c)7 which allows for the on-site processing (i.e., chipping) of wood for use at the Site (i.e., use as landscaping material) and/or the wood to be transported to a permitted facility (i.e., wood waste reclamation facility) or other facility that is permitted to accept and process wood.**

Comment noted.

DEPARTMENT OF ENERGY RESOURCES (DOER)

DOER 01 **Hyannis, which is located with Barnstable, is not a stretch code community. Baseline for this project, therefore, would be Massachusetts base code. Note, however, that an updated version of the Massachusetts commercial stretch code goes into effect on 1 July (herein called the "July 2023 commercial stretch code".) Because this updated code contains numerous provisions which deliver emissions reduction, we recommend that the project, as a mitigation measure, follow the provisions July 2023 commercial stretch code for the proposed expansion. (In addition, we recommend that the project adopt, as a mitigation measure, efficient electric space and water heating, more below.)**

In order to support the Airport's decarbonization goals, the Proponent would be willing to commit to the 2023 Stretch Energy Code measures. In lieu of modeling, the Proponent is committing to a series of GHG mitigation commitments. Should any future Energy Code Updates occur prior to the commencement of work, the Project will comply with future Energy Code Updates.

- High performing envelope that complies with the 2023 Stretch code envelope performance requirements;
- 100% heat pump space heating;
- Energy recovery ventilation per the 2023 Stretch code update;
- Electric domestic hot water heating, specific method to be determined. Heat pump domestic hot water heating to be analyzed;
- Roof to be constructed PV-ready;
- Installed electric vehicle (EV) charging spaces, quantity to be determined;

DOER 02 **Thermal breaks should be thoroughly incorporated into the design to ensure that the intended wall, window, and roof performance is being delivered. The project can use the thermal bridge accounting method described in the Building Envelope Thermal Bridging Guide2. This design guide now has a web-based database3.**

See DOER 01 response.

DOER 03 **We recommend adopting C406.8 of the July 2023 commercial stretch code as a mitigation measure for all buildings. This section requires air infiltration of 0.2 cfm/sf or less at 75 Pa, confirmed with testing in the field.**

See DOER 01 response.

DOER 04 **Ventilation energy recovery includes systems that recover energy in a building's ventilation system. Note that the July 2023 commercial stretch code increases the minimum ventilation energy recovery effectiveness to 75% for dwelling**

spaces, 70% for Class 1 and Class 2 exhaust, and 50% for Class 3 and 4 exhaust. A recommended above-code mitigation measure is to improve Class 3 and 4 exhaust effectiveness to at least 70%.

See DOER 01 response.

DOER 05 **Solar gains can be managed with a combination of external shading, set-back windows, reduced window aperture (e.g. "window to wall ratio"), and/or improved solar heat gain coefficient (SHGC) vision glass. We recommend using cooling TEDI to evaluate these strategies. Note that cooling TEDI limits are now mandatory for some building types in the July 2023 commercial stretch code.**

See DOER 01 response.

DOER 06 **The proposed terminal expansion can be readily fully electrified for space heating using air source heat pumps systems, which is recommended.**

See DOER 01 response.

DOER 07 **Service water can be readily fully electrified with air source heat pump water heating for the proposed terminal, which is recommended.**

See DOER 01 response.

DOER 08 **Rooftop PV can provide significant GHG benefits as well as significant financial benefits. Even if PV is not installed during building construction, it is important to plan the project to ensure that roof space is set aside for PV and that roof space doesn't become unnecessarily encroached with HVAC appurtenances, diminishing the opportunities for future PV.**

The Airport encourages tenants to consider rooftop PV during their construction projects. In fact, Griffon Avionics is in the process of installing rooftop PV to their building on Airport. The Airport encourages tenants to adopt sustainable building practices as part of our "Gateway to Green" initiative and to do their part to reduce environmental impact. Any modifications to the terminal building itself will ensure that the roof will be PV-ready.

DOER 09 **EV charging stations are critical for the continual transition towards electric mobility. Both EV charging stations and spaces that are EV ready are recommended.**

As a mitigation measure, we recommend providing EV equipment to at least 10-15% of the spaces and having at least 20-25% of spaces be EV ready.

See DOER 01 response.

DOER 10

1. A combination of high-performing, thermally broken envelope, heat recovery, and solar gain management should be used throughout with an aim toward reducing heating and cooling TEDI. Strategies to achieve this include:

a. Above code-threshold envelope (vertical walls, windows, roofs and exposed lower-level floors). Priority should be given to increasing continuous insulation and framed insulated wall sections.

b. Account for thermal bridges in assemblies. Use thermal bridge free assemblies and components to thermally break:

i. Hangers, girts, ties, and brick shelfs

ii. Intersections between balconies and vertical walls

iii. Intersections between the floor and vertical walls

iv. Transitions from wall to window

v. Parapets

vi. Vertical wall to vertical wall transitions (where the wall "turns")

c. Minimize glazed wall systems as much as possible. Avoid these systems where possible, as these are the lowest performing wall systems.

d. If glazed wall systems are used, evaluate systems having opaque the "spandrel" portion between R-4 through R-10. Opaque spandrel systems with performance higher than R-10 are not recommended as there are significant difficulties to achieving performance higher than this in practice. Consult https://thermalenvelope.ca/catalogue/ for pre-solved opaque curtain wall performance values. Note that the 2023 commercial stretch code now mandates that the vision portion of the glazed wall system has at least R-4 vision glass.

e. For all wall sections adjacent to office and similar spaces, use the thermal comfort tool to help evaluate reduction/elimination of perimeter heating systems. https://www.payette.com/glazing-and-winter-comfort-tool/

f. Reduce air infiltration to at least 0.2 cfm at 75 Pa per C406.9. Note that air infiltration testing is now mandatory.

g. Incorporate ventilation energy recovery with an effeteness of at least 70% for class 3 and 4 exhaust.

h. Manage solar gains with external shading and/or low solar heat gain coefficient (SHGC).

See DOER 01 response.

DOER 11 **2. Incorporate efficient electrification as follows:**

a. Utilize full electrification of space heating with air source or ground source heat pumps.

b. Utilize air source heat pump water heating.

See DOER 01 response.

DOER 12 **3. Develop the following proposed scenario:**

a. Building meeting July 2023 commercial stretch code

b. Air source heat pump space and hot water heating

See DOER 01 response.

DOER 13 **4. Evaluate incentives, including:**

a. Estimate of Alternative Energy Credits;

b. Estimates of MassSave® incentives, based on meeting with utility.

See DOER 01 response.

DOER 14 **5. Evaluate 80% rooftop solar PV readiness for all buildings. Evaluation should include creating building roof plans showing location of PV readiness areas and location of roof HVAC equipment and other appurtenances. Provide table showing areas needed for code required PV readiness and proposed, above-code PV readiness.**

See DOER 08 response.

DOER 15 **Provide EV equipment to at least 10-15% of the spaces and having at least 20-25% of spaces be EV ready.**

The Airport has committed to eight (8) EV charging stations s well as electric aircraft charging infrastructure.

DOER 16 **7. Include the following table for each proposed building (add rows as necessary):**

Project design for buildings has not progressed to be able to fill out the below table. As terminal building expansion is not anticipated for at least five years, this will be addressed when applicable.

	% of above grade vertical envelope	**U-value**
Framed wall		
Glazed wall system – vision		
Glazed wall system - opaque		
Operable fenestration (which is not part of glazed wall system)		
Inoperable fenestration (which is not part of glazed wall system)		
Doors		

CAPE COD COMMISSION (CCC)

CCC 01 **The DEIR should assess whether the taxiway relocation could be designed to avoid work within the wetland buffer, and if not, provide additional detail about potential mitigation.**

Section 4.1.2.1 provides a detailed alternatives analysis regarding Taxiway D relocation design. Potential mitigation for impacts is provided in Section 6.1.4.

CCC 02 **The Applicant should provide further detail on any proposed tree clearing, invasive species management and potential vernal pools across the Project site.**

Proposed tree clearing is quantified in Section 6.4.1.4 There are no potential vernal pools identified within the proposed project limits. These are identified in Figure 5.4-1.

CCC 03 **The Applicant should use available water quality monitoring data to demonstrate whether installed stormwater management systems are performing as designed in these areas.**

See response to MEPA #66.

CCC 04 **The proposed Project would increase impervious surfaces by approximately 21 acres over current conditions. While the ENF includes goals to create no net increase in stormwater runoff, provide treatment where needed, and follow post-construction best management practices ("BMPs"), additional detail should be provided in the DEIR.**

The airport currently utilizes many types of drainage structures and different types of proprietary stormwater BMPs on the airport for conveying and treating stormwater runoff. Final design for each of the proposed runway and taxiway projects will incorporate project specific devices similar to those currently in use on the airfield to convey and treat stormwater runoff. All devices used shall be in conformance with MassDEP requirements. Please see Section 6.1.2.1 for a discussion on conceptual stormwater management design and compliance with MA Stormwater Management Standards.

CCC 05 **Commission staff recommend the Applicant specify which stormwater treatment systems will be used, installation location, capacity, and treatment performance.**

Final design for each of the projects identified in the AMPU will require the designer to specify each stormwater treatment device including location, capacity, and treatment performance. Each infiltration system will require pretreatment of

stormwater runoff to remove a minimum 80% TSS prior to discharge into each proposed infiltration system. Each system will be designed in accordance with MassDEP standards.

CCC 06 **The DEIR should also include any available stormwater management plans and assess whether additional units could be added to treat runoff and capture pollutants.**

Additional leaching basins will be required to accommodate runoff from new runway and taxiway pavements. Final design for each of the proposed projects will include pretreatment devices to remove a minimum 80% TSS as required by MassDEP prior to discharging into underground leaching systems.

CCC 07 **The ENF indicates that analysis of wastewater generation and treatment changes will be developed in the EIR process. The Applicant should include this analysis for review, and coordinate with the Town of Barnstable to ensure there is adequate sewer capacity to accommodate any additional flow.**

The project is still in a planning phase, and design for buildings has not progressed to be able to determine meaningful wastewater generation volumes. As the terminal building expansion is not anticipated for at least five years, the Airport will, in the future, once design is advanced, coordinate with the Town of Barnstable to ensure there is adequate sewer capacity to accommodate any additional flow.

ROBERT WRITENOUR, TOWN OF YARMOUTH (RW)

RW 01 **We take this opportunity to note that in our earlier comments, we took exception to the use of a 15 percent margin in the runway length analysis for wet and contaminated runway surface conditions for turbojet-powered aircraft under takeoff conditions. This is contradictory to the FAA guidance, which allows for this margin only for landing runway length requirements.**

Because the Airport is currently served by JetBlue Airlines and specific business jet operators, we strongly recommend that the scope of work incorporate the following text for the Purpose and Need section:

JetBlue Airlines and known and specific operators of business jet aircraft based at or that frequently use the Airport be queried with respect to (1) frequency of flight/weight restrictions and cancellations experienced due to the current Runway 15-33 length, and (2)the required runway lengths (takeoff and landing) to serve their current and anticipated specific aircraft models and equipage, and flight mission when operated in accordance with their Federal Aviation Administration (FAA) approved flight operations manual.

In the event these operators are unable to provide this data, it is available from commercial sources as opposed to interpretation of the generalized aircraft performance charts offered by the FAA and/or aircraft manufacturers. These commercial sources often serve as flight dispatchers for airlines and high-performance aircraft users and, consequently, have the ability to provide an equivalent level of data to support the analysis of the required runway length for specific aircraft and equipage, and flight missions when these aircraft operate at the Airport.

Comment noted.

RW 02 **Should any extension to the length Runway 15-33 be justified as described above, the scope of work for the environmental reports should re-examine those options presented in the AMPU to provide that length for takeoff and landing. In this regard, we note that the AMPU presents a "balanced" approach to lengthening the runway at each end so as to equalize the distribution of aircraft noise impacts on communities northwest (Barnstable) and southeast (Yarmouth) of the Airport in terms of its size (area of impact). However, in our opinion, this "balanced" approach failed to consider the extent and density of residential land use in these impacted areas. Observation of aerial views and the source of continuous noise complaints from residents clearly demonstrate that areas to the southeast of the Airport are more impacted by aircraft noise. Our earlier comments on the AMPU suggested that the then proposed extension of Runway 15-33 and that which we**

determined in our independent analysis take this and other factors into consideration. Accordingly, we offered a more preferred solution that would result in lesser aircraft noise impact on land uses to the southeast of the Airport.

During the course of the public meetings since the submittal of the ENF the Airport revised its proposal to extend Runway 15-33 by eliminating the proposed 400-foot extension at the Runway 33 end. This reduces the overall proposed extension to just 895 feet (versus 1,295 feet as recommended in the AMPU), all of which is proposed for the Runway 15 end. Extending Runway 15 end, with no proposed extension at the Runway 33 end, effectively results in departing aircraft flying slightly higher over properties located southeast of the airport. Higher aircraft are theoretically slightly less noisy than would otherwise occur under existing conditions.

RW 03 **Consequently, we recommend that the scope of work for the environmental reports that address alternative means to provide a runway extension, if any is justified, be incorporated as indicated in the text below.**

Alternative means to provide the required runway length should consider balancing community aircraft noise impacts that take into consideration the location and density of residential development in areas surrounding the Airport. To the extent feasible and consistent with FAA airport planning guidance, runway extension alternatives that maximize the extension of Runway 15-33 to the northwest (Runway 15 end) be particularly evaluated. The continued application of displaced runway landing thresholds should be included in these analyses, especially at the Runway 33 end.

See RW 02. Additionally, please note that displaced thresholds are maintained on Runway 15-33 as described in Chapter 3.0.

RW 04 **Although not included in our earlier comments, we recognize the concern of our citizens that the use of average annual day-night aircraft noise contours is insufficient to address their concerns. This has been and continues to be a topic of considerable research by the FAA and others, and additional means to depict aircraft noise impacts are of value in assessing this component of the environmental reports. Consequently, we recommend that the following text be incorporated in the scope of work for applicable sections of the environmental documents.**

Aircraft noise impacts should include the average annual day-night contours shown as the 55 Ldn through 80 Ldn in five-level increments, as well as single-event contours for the same Ldn increments as applicable to a range of aircraft types. These include the Embraer 190AR and Airbus A320 Classic as operated and configured by JetBlue Airlines; Cessna 402C and Tecnam P2012 Traveler as operated by Cape Air; Gulfstream JV, Bombardier Global 5000, King Air 200, and

Cessna 172. These contours should be presented for the existing flight routes commonly flown at the Airport on each of the four runway ends, and for any future flight path recommended for aircraft noise mitigation measures. In the event that the FAA noise model database does not include these aircraft types, comparable aircraft models should be utilized. The intent of these single-event aircraft noise is to better reflect the aircraft noise impact that residents experience on a daily basis.

A detailed noise analysis conducted with the FAA-approved Aviation Environmental Design Tool (AEDT) modeling software for predicting DNL sound level impacts from airports (as required by the Code of Federal Regulations, Title 14, Part 150 FAA) has determined that cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of the Day Night Average Sound Level (DNL). Sections 5.9 and 6.6 provide details on this analysis on existing and proposed conditions, respectively.

RW 05 **we earlier encouraged and gained the support of the Airport and the chief of the air traffic control tower to evaluate a standard instrument departure procedure for Runway 15. Accordingly, we request that the scope of work for the environmental reports include the following text:**

Aircraft noise impact mitigation measures should include a feasibility study of the implementation of a standard instrument departure procedure for Runway 15 that serves to provide a definitive flight path and altitudes that minimize aircraft noise impacts on residential land uses southeast of the Airport. The feasibility study should utilize applicable FAA Orders and take into consideration the use of the airspace by aircraft operating to and from other airports in the region and radar coverage limitations as a means to define waypoints and/or ground-based navigational aids for the recommended procedure. Up to three alternative standard instrument departure procedures may be evaluated. Aircraft noise contours may be incorporated in the analysis to qualitatively and quantitatively demonstrate the mitigation results. The alternative procedures will be reviewed with the Airport and air traffic control tower staff in the early and interim phases of the study, and then as part of identifying the preferred instrument departure procedure.

When determined to be beneficial in reducing aircraft noise impacts, the recommended standard instrument departure procedure should be referred to the FAA for its final design and implementation. The schedule for such procedure implementation is subject to FAA internal coordination, however, its need should be included as a condition of the approval of the recommended capital projects evaluated in the environmental documents.

Additionally, a graphic of the Airport-suggested voluntary aircraft noise abatement flight routes be prepared to accompany the current text as a means to better inform pilots and enhance aircraft noise mitigation measures. The analysis of aircraft noise impacts may signal a need to modify the existing voluntary noise abatement program.

FAA prohibits restrictions from the Airport on flight paths, hours of operation and restricted access to airports. Federal law prohibits restricting the route by which an aircraft has access to the airport to aid in noise abatement. As discussed in Section 5.9, the Airport has a long-standing voluntary noise abatement flight procedures for visual flight rules. These procedures are periodically re-evaluated and updated as necessary.

Additionally, there are voluntary quiet hours between 10 p.m. and 6 a.m. when airport users are encouraged to restrict their flights. Touch and go nighttime flights are also prohibited. These noise abatement measures are guided by safety considerations as well as federal law. Ultimately, pilots must have control over their flight procedures to ensure safe takeoff and landings based on weather conditions and aircraft capabilities. The Airport coordinates with all users of the airport to mitigate noise issues and maintains multiple ways to report complaints when made including in person, over the phone and online reporting (see https://flyhya.com/pilot-info/noise-abatement/).

With regards to consideration of noise mitigation for current and future operations, the Airport will consult with FAA and primary Airport air taxi operators such as Cape Air on flight path modifications that may serve to minimize noise impacts.

RW 06 **Higher aircraft activity levels and the increased area of impervious surfaces associated with the proposed capital projects at the Airport introduces larger volumes of water runoff that need to be accommodated and treated before release. Additionally, Airport firefighting operations generate volumes of PFAS (per- and polyfluoroalkyl substances) contaminant, as does normal aircraft deicing activity. These impacts should be addressed in their respective portions of the scope of work for the environmental documents. At this time, we have not identified specific text for this component of the environmental documents. Our intent is to highlight this concern so that it may be addressed.**

Details regarding how the Airport is addressing stormwater management and potentially contaminated sites are provided in Sections 6.1 and 6.13.

HYANNIS PARK CIVIC ASSOCIATION (HPCA)

HPCA 01 **Since the inception of the Master Plan process, all dissemination of information has strictly been formalized in legal notification formats. Community Work Groups were halted. In lieu of our CWGs, we were invited to Airport Commission meetings. These meetings were no longer friendly, Hyannis Park-centric discussions. We became interlopers, devoid of any "standing" in these meetings. We sent representation to keep some semblance of a dialogue. But no one was listening. We were told that pilots could not be briefed about flights over our Park. They were now autonomous. Our complaints were viewed as petty. We were deemed "noise sensitive." We are being sacrificed.**

Comment noted. All public outreach for the Draft EA/EIR process is identified in Chapter 9 – Public and Agency Coordination and has extended beyond legal notification formats.

HPCA 02 **Air traffic noise is a problem. Single event noise testing would be more appropriate to evaluate noise levels. Many residents cannot sit on their porches or patios because of singe-event noise. Conversation interruptions are commonplace. Those of us who work remotely are interrupted in our remote conferencing. This is a real problem. Residents have stopped complaining to the Airport, because no solutions are being offered. This had not been the case with previous administrations. Pilots were talked to and advised before taking off to respect the relative quiet of our neighborhood.**

The noise contours that were initially presented in the Master Plan presentation (not the ones presented at the MEPA presentation) were shocking to our community.

The proposed Projects are not anticipated to generate an increase in different aircraft operational activity at the Airport. Consequently, impacts to community noise levels are not expected. Based on the future runway conditions using the above referenced operations data, AEDT modeling indicates that the 70 and 75 dBA DNL contours are entirely within the Airport property. The 65 dBA contour slightly extends into the commercial land use across Yarmouth Road, similar to the no-build conditions.

Figure 6.6-2 shows that the 65 dBA DNL sound contour generally falls within the airport property, extending just beyond the property to the east near Yarmouth Road and to the west by Independence Drive. These commercial facilities are all below a DNL of 70 dBA, which is the noise compatibility threshold of commercial land uses.

Please refer to Section 6.6 for additional details on the noise analysis.

HPCA 03 **The second issue and the most devastating is the contamination of our Mill Creek. Cape Cod Gateway Airport shares the Lewis Bay Watershed with Hyannis Park. Whatever toxic spills occur on the Airport flow to our homes. The fragility of our shared watershed is well documented in Cape Cod Commission documents. With Yarmouth's Hyannis Park directly downstream of the Airport, this has proven to be disastrous. In the case of Mill Creek, we were never notified by any entity of our exposure to PFAS. We learned of the contamination from a Silent Spring Institute webcast that cited the research by Harvard's T.H. Chan School of Public Health entitled "Isolating the AFFF Signature in Coastal Watersheds Using Oxidizable PFAS Precursors and Unexplained Organofluorine", by Bridger J. Ruyle,* Heidi M. Pickard, Denis R. LeBlanc, Andrea K. Tokranov, Colin P. Thackray, Xindi C. Hu, Chad D. Vecitis, and Elsie M. Sunderland, Environ. Sci. Technol. 2021, 55, 3686−3695. … We need a real remediation solution in order for Mill Creek to eventually clear out. Capping the Airport plume is inadequate when considering the downstream contamination.**

Comment noted. The Airport is working with the Town on addressing mitigation at the Maher Wells.

HPCA 04 **Any expansion of operations into our already inadequate buffer zone is deemed unacceptable.**

There is no proposed expansion of airport operations beyond the current airport property boundary. Potential easement acquisition on a willing seller basis only to enhance safety within the Runway Protection Zones is proposed as discussed in Section 3.3.

PAUL PHALAN (PP)

PP 01 **1-The sound testing presented so far has been shoddy, old and inaccurate!**

It is unclear what this comment is referring to relative to sound testing, as it does not provide any information on what "sound testing" it is referencing .

The Project team refers the commenter to Section 5.9 and Section 6.6 for a discussion of the noise analysis conducted as part of the EA/EIR process.

PP 02 **3-the proposed work isn't required by the FAA!**

This comment is inaccurate. The FAA requires airports to strive towards compliance with airfield design, capacity, and safety standards, which are contained within FAA's Advisory Circulars,. regulations, standards, and policies. The Master Plan update is a precursor to qualifying projects for FAA and State funding, as well as to assess the airport's facility requirements based on the users of the airport, and compliance with FAA standards.

We respectfully suggest that the commenter review the FAA resources on its webpage for Airport Planning and Capacity to learn more:

https://www.faa.gov/airports/central/planning_capacity

PP 03 **4-the CCGA is empty every day I drive by. It has periods in the summer of being busier. This project is only beneficial to a few corporations and affluent citizens!**

We note the anecdotal information provided by the commenter; however, it is not substantiated.

SUSAN SULKOSKI (SS)

SS 01 **I find the proposed plan a more than fair compromise to the neighbors of 15-33 and a necessity for safety and a thriving community. The airport has worked very hard to address current and future environmental issues. I believe they will continue to do so.**

Comment noted.

THOMAS SULLIVAN (TS)

TS 01 **The Barnstable / Gateway Airport has a long history of pollution on the ground. A plume was discovered in front of the old terminal and was moving in an easterly direction. Today that same plume which starts at the Cape Air Hangar, has immigrated off the Airport to the Mahar Water Wells. The Town of Barnstable had to spend 500,000 dollars to put in a Water filtration system to clean out the contaminants, contrary to what the airport is saying that the plume didn't go to the Marhar water wells; the same wells are now showing PFAS contamination. …Any extension of 15/33 should require all groundwater pollution to be removed adjutant to Runway 15/33 to include Lead contamination from the Cesena 402s owned by Cape Air. It has been found in the Storm Water runoff system, before any project is approved.**

Please see Section 6.13 for a discussion of construction period mitigation measures relative to managed release sites at the Airport.

TS 02 **Upper Gates Pond sits in between both runways. The Stormwater system discharges into this pond. It was discovered that the pond had high levels of lead in the pond sediment, and the decision was made not to remove the sediment because it's sitting on top of the aquifer. With Delta Taxiway modifications being planned, Upper Gates Pond sediment should be eradicated before it seeps into the Aquifer.**

Evaluation of sediments in Upper Gate Pond will be conducted as part of the ongoing Phase II site assessment of this area.

TS 03 **With Modifications to Delta Taxiway and a New Engine run up area, the present plan is not acceptable. The Run-up pad should be in-closed to suppress the sound to support turbine and piston aircraft. The Airport is located in a densely populated area.**

The proposed runup pad moves the location of run-up pad closer to the airfield and runway. A proposed noise barrier is being evaluated for sound mitigation and attenuation.

TS 04 **I mentioned at the public hearing that it was brought to my attention that the Army/ Navy buried lots of materials before they gave the airfield back to the Town. The Army/Navy used the field from 1940 to 1946 for flight training. The mentioned items are vehicles, the fuselage of aircraft, and 55 gallons drums. It was mentioned at the public meeting that the Airport, through Ground Wave Sonar, detected an anomaly in the ground near runway 06. This has to be further investigated, and if any buried items are found, they must be removed along with any ground contamination. It was also mentioned at the hearing that there are**

several areas at the airport where items are buried; this also has to be investigated, and remedial action must be taken before the airport can expand the runways and taxiways.

Recent reconstruction and grading of Runway 6-24 in summer 2023 has not identified any buried materials. The Airport's Licensed Site Professional of record, Horsely Witten Group, has not identified such buried materials in their site investigations. Construction period material management is discussed in Section 6.13.

TS 05 **The Airport showed a slide of the present noise contours. The contours need to be updated since they were made in a study in 1998 with Cape Air piston aircraft, using Cape Air Pilots. The owner of Cape Air was a member of the Barnstable Airport Commission sub-committee at the time and had a finical interest in the study since his HQ is located at the Airport. Cape Air should never have been used.**

A new Noise Study (Part 150) should be conducted with a mix of Piston aircraft and Turbines, including Commercial and Corporate Jets. The study would have to include different Turbine Stages, especially Stage 1 aircraft since the airport now allows them into the airport. A new Part 150 would also show an increase in the 65 noise area around the airport and an expansion of the Flight Paths into the Town of Dennis and Harwich, possibly putting an air restriction over the Towns as the Airport has over the Town of Yarmouth with no Easements granted. The Town was denied by the Airport and FAA to allow a wind Turbine to be put up at the Landfill.

A detailed noise analysis conducted in accordance with Code of Federal Regulations, Title 14, Part 150 was completed with the FAA-approved Aviation Environmental Design Tool (AEDT) modeling software for predicting DNL sound level impacts from airports. modeling software. FAA has determined that cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of the Day Night Average Sound Level (DNL). Sections 5.9 and 6.6 provide details on this analysis on existing and proposed conditions, respectively.

TS 06 **There is an Alternate site for this Airport and that site is at Otis where it should be moved.**

This alternative is discussed within Section 4.1.1.8 and identified as Runway 15-33 Alternative 6 – Closure of Cape Gateway Airport and Operational Shift to Joint Base Cape Cod.

CHRISTINE GREELEY (CG)

CG 01 **This truly is a "If you build it, they will come" proposal.**

Yarmouth derives no benefit from their operations, but incurs environmental issues and impingement on the quality of life in our town.

FAA provides funding to airport projects via a Capital Investment Plan (CIP) covering a 5-year plan that lists projects intended for that period. Funding is derived from FAA's Airport Improvement Program (AIP), and guidelines are presented in FAA's AIP Handbook. The requirements/justification to receive project funding per the AIP Handbook is accessible via the following link:

https://www.faa.gov/sites/faa.gov/files/AIP-Handbook-Order-5100-38D-Chg1.pdf

FAA can only add airport infrastructure projects to the CIP if they are justified based the following three basic tests in contained in the FAA AIP Handbook, Table 3-4:

1. The Project Advances an AIP Policy;
2. There is an Actual Need; and
3. The Project Scope is Appropriate

The FAA is not allowed to fund projects or project elements that are not justified based on the three tests listed above and further explained in the AIP Handbook Table 3-4 (Page 3-7)..

To be eligible for FAA funding, a runway extension needs to be justified based on documented actual need, and not "speculative" as in "if you build it, they will come". The need for the proposed runway length extension is based on FAA's guidance for determining the runway length recommendations for the existing families of aircraft currently using the airport. Runway length recommendations are discussed in detail, along with backup data and analysis, in Chapter 5 -Facility Requirements of the Master Plan update (included within Appendix B).

The statement that "Yarmouth derives no benefit from [the airport's] operations is inaccurate. The leases and services offered at the Airport contribute to the economic output of the Airport and more importantly, to Barnstable and the Cape Cod region as a whole. Cape Air is the third largest employer in Barnstable (behind only Cape Cod Hospital and the municipality itself). MedFlight operates out of the Airport, providing key emergency response medical services, along with the U.S. Coast Guard (USCG). The Airport supports a total employment of 2,135 people with a total payroll of

$85,358,000, money that is returned to the community in the form of purchases from local business, rent, taxes, etc. Please refer to the discussion of key Airport services in Section 1.3.

CG 03 **Runway 6/24 will be closed for the majority of 2023 as an extension and runway improvements are undertaken. Why then, with that new FAA standards runway, is an additional runway truly needed to meet the hoped-for arrival of jets they are trying to attract?**

Runways are constructed to align with historical wind patterns specific to each airport because aircraft land and take off into the wind. Appendix B of FAA's AC 150/5300-13B – Airport Design provides design guidance for determining the necessary runway configurations to address wind patterns.

Accurate analysis of the wind coverage adds substantially to the safety and utility of an airport. Airport planners and designers conduct an accurate wind analysis to determine primary runway orientation and coverage, and if a crosswind runway is necessary at an airport.

The desirable wind coverage for an airport is 95 percent of the time based on the total number of weather observations during the recording period of at least ten consecutive years. If the primary runway orientation provides less than 95 percent wind coverage, a crosswind runway is needed. Specific information and wind coverage analysis to support the current runway configuration at CCGA is contained in the Master Plan – Section 5.2.5 Runway Orientation.

We also note: Runway 6/24 was temporarily closed for reconstruction in Spring/Summar 2023 and was not extended. No additional length is being added to Runway 6/24 as part of the current project.

Why would it not be more appropriate to open the new runway, clean up and further assess the significant environmental issues of the entire site and see what demand will truly be. Then take a look at what and where there is need?

The alternative site repeatedly mentioned would be at Otis where so many of the issues are either already addressed or not a concern.`

This alternative is discussed within Section 4.1.1.8 and identified as Runway 15-33 Alternative 6 – Closure of Cape Gateway Airport and Operational Shift to Joint Base Cape Cod.

CG 04 **Runway 6/24 is already a deeply concerning hazard given the major roadway and busy shopping plaza at its end. There does not need to be increased air traffic in such vulnerable areas that abut both runways at this airport.**

Air traffic for Runway 6-24 is not anticipated to increase as a result of the proposed Projects. Overall, the Master Plan forecasts shows enplanements and operations slightly increasing from the baseline of 67,350 (operations) in 2020, to 67,219, and 68,804 in 2025 and 2030 respectively. Please refer to the Master Plan Section 4.6.2 Forecast Methodologies and Section 4.6.2 Growth Influencers for details on these projections.

Please see discussion in Section 3.3 regarding Runway Protection Zones - the protective area maintained off of the runway end, along with the installation of EMAS system, to address concerns with airplane overruns on the Runway 6 end.

CG 05 **I believe that the Noise Contours diagrams presented with this project are significantly flawed as they are based on averaging events at this airport in such a way as to make the contours look smaller and insignificant. A Noise Study based more realistically on actual air traffic hourly patterns and the actual seasonal nature of air traffic would show that the true contours and range of noise pollution is occurring in seriously larger areas to higher numbers of abutters.**

A detailed noise analysis conducted in accordance with Code of Federal Regulations, Title 14, Part 150 was completed with the FAA-approved Aviation Environmental Design Tool (AEDT) modeling software for predicting DNL sound level impacts from airports. modeling software.

FAA has determined that cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of the Day Night Average Sound Level (DNL). Please refer to FAA's webpage on the use of DNL here https://www.faa.gov/faq/what-dnl-and-why-does-faa-use-it

Sections 5.9 and 6.6 provide details on this analysis on existing and proposed conditions, respectively.

CG 06 **The idea of expanding this runway for more uncontrolled air traffic so closely over our homes is a major environmental issue- for noise and any fuel residue/emissions pollution generated during take-offs and departures! This is something that needs much more study and documentation before any runway expansion.**

See CG 05 response and Sections 6.3 and 6.6 of this document for a discussion of Air Quality analysis and noise analysis.

BETTY LUDTKE (BL)

BL 01 **While I find the ENF to be well written and comprehensive, I believe a viable alternative has not been appropriately studied. My request, as we move forward to the Draft Environmental Impact Report (DEIR) stage is to include this alternative. That alternative is the joint use of the airfield at Joint Base Cape Cod. On our current path, we are committing a substantial amount of resources to expand operations at the already congested Cape Cod Gateway airport. Before we do this, we should study a joint use solution at the air eld at Joint Base Cape Cod.**

This alternative is discussed within Section 4.1.1.8 and is identified as Runway 15-33 Alternative 6 – Closure of Cape Gateway Airport and Operational Shift to Joint Base Cape Cod.

DONALD ENGLERT (DE)

DE 01 **In addition to constant noise pollution from the planes a big concern is potential pollution of Mills Creek and Lewis Bay resulting from plane exhaust.**

The Airport does not currently have any information to suggest that potential pollution in Mills Creek or Lewis Bay is the result of plane exhaust.

We note that FAA's Environment and Energy Emissions Division (AEE-300) supports efforts to achieve a quiet, clean, and efficient air transportation system. Relative to that goal, FAA's AEE-300 works with the Aviation Sustainability Center (ASCENT), the FAA's Center of Excellence (COE) for Alternative Jet Fuels and Environment. The FAA is supporting Research and Development (R&D) to develop new aircraft and engine technologies, and evaluate sustainable aviation fuels (SAF). Technologies developed by this program will result in a fleet of aircraft that have lower noise, use less fuel, and produce fewer emissions. Information on the ASCENT center can be accessed from https://ascent.aero/

ELISSA BUJA (EB)

EB 01 **This "Gateway" needs to worry about current problems before creating newer, larger ones.**

We acknowledge the comment, but note that it reflects an opinion rather than a question.

LUCINDA VAN DOREN-ABRECHT (LDA)

LDA 01 **I am very concerned about all the gas, oil and other plane and jet emissions that are being released and filtering down on our homes, residents and vegetable gardens. What exactly are we being exposed to daily and has anyone thoroughly researched these ill effects?**

Air quality is regulated by EPA, and under The Clean Air Act, EPA is required to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants (also known as "criteria air pollutants"). The proposed Project's compliance with EPA's air quality regulations is provided in Section 5.6

We note that FAA regulates emissions from aircraft and currently Federal actions are underway to reduce the footprint of the aviation sector. See FAA' webpage https://www.faa.gov/sustainability

Among FAA's efforts includes investments in sustainable aviation fuels (SAFs) produced from renewable and waste feedstock that provide the greatest impact to reduce greenhouse gas emissions.

LDA 02 **...research has shown that the Lead levels [Pb } in children's blood are significantly higher in children living closer [1 1/2 mile radius of airport] than children who live farther away. This was shocking and I had to do my own research on this, which I suggest you do as well. The study revealed aviation gasoline is currently the largest source of air pollution by Lead in the U.S.. Lead's toxicity is known for adversely affecting the nervous system, immune system and kidney function, as well as interfering with the reproductive and developmental systems and the cardiovascular system. This Lead, although banned from automobile gasoline, is still present in aviation gasoline. This alone should be of utmost concern.**

Public health concerns are discussed in Section 6.12. Data specific to the community around Hyannis was analyzed. The above comment cannot be independently verified relative to the Cape Cod Gateway Airport. Furthermore, jet fuel (commonly used Jet A and Jet A-1) is not leaded, and only piston-engine powered aircraft use leaded fuel (i.e, avgas) .g., 100LL). The proposed Projects are not expected to result in an increase in aircraft that use avgas

We also note that "The FAA is committed to removing lead from aviation gasoline without adversely affecting the safe and efficient operation of more than 220,000 general aviation aircraft. The Environmental Protection Agency's endangerment finding requires the FAA to regulate fuel composition and with this decision, the FAA will initiate rulemaking aimed at controlling or eliminating aviation lead emissions from piston engine aircraft.

The transition to a new fuel is a national initiative and it is important for the safety of aviation that 100-octane low-lead fuel continues to be available for piston engine aircraft that require its use.

For more information on FAA's EAGLE Program (Eliminate Aviation Gasoline Lead Emissions), can be found here https://www.faa.gov/unleaded

LDA 03 **Of course I also would like to address the enforcement of flight paths and who would be accountable for enforcing that.**

The FAA's Air Traffic and Flight Procedures are accountable for flight paths.

We also note that flight paths are established based on runway orientation, surrounding terrain and navigational aids at a given airport.

The FAA encourages airports to establish voluntary noise abatement procedures, these cannot jeopardize aircraft operational safety and therefore are not always feasible

LDA 04 **Secondly, how will toxic chemicals be tested for on a yearly basis in surrounding water sources and grounds, and who would be held accountable for that.**

The Airport has collected over 125 soil samples and 187 groundwater samples for PFAS analysis. The network of groundwater monitoring wells will be maintained and samples taken in accordance with MassDEP requirements under the Massachusetts Contingency Plan. Please see https://flyhya.com/airport-info/pfas/ for all available reports and methodologies as reported to MassDEP.

ANONYMOUS (AN)

AN 01 **The noise will greatly increase and have a horrible impact on quality of life, environment and NOISE in our small, middle class neighborhood. At a time when climate crisis is having big impacts on the Mid-Cape and the environment being degraded with algae and bacteria blooms, it is no time to increase noise and pollution in this area of the Cape. Additionally the plans to rejuvenate the bog/vegetation near Cape Cod Hospital to improve the environment, the Airport would take away and delete any improvements by that expensive and much needed project.**

Noise analysis results indicate that noise levels will not increase in residential areas as discussed in Section 6.6. The Airport project will have no impact on environmental restoration projects proposed elsewhere.

AN 02 **Additionally, this airport has LOST airline usage over the last 10 years and there is LESS of a need for air travel moving forward. With the electrification of personal vehicles and the tremendous cost to the climate of air travel, this plan goes against what the area will need over the next 10-30 years.**

As detailed in Chapter 2.0, the need for each Project is identified and discussed in detail. Decrease in operations is discussed in Chapter 1.0.

RICHARD MIKOLAJCZAK (RM)

RM 01 **By increasing the airport in Hyannis is absolutely NOT necessary…Why not bring the train in on a full time schedule instead of only the summer? More people that actually live here and can afford transportation would be happy to use another option to go to Boston other than a bus, car or plane.**

Comment noted. To clarify, the Airport is not expanding beyond its current property boundary nor implementing projects designed to increase operational capacity. The Airport cannot speak to rail operations and schedules and would refer the commenter to MassDOT Rail and Transit Division and the Massachusetts Bay Transportation Authority.

ROBERT BERRY AND KATHLEEN BENSON (RK)

RK 01 **Assuming the airport is wholly owned by the Town of Barnstable, it appears that the Town will ultimately be responsible for bearing the entire cost of the expansion of the airport including financing costs (which could entail a bond issue unless the Town receives funds from the FAA's AIP program).**

The issue facing the Airport and the Town is the proportion of the cost of expansion borne by those using the airport and that borne by the Town itself.... It is unclear why the Town and its residents, not airport users, should cross-subsidize the proposed expansion.

The Airport operates as an enterprise fund, and is financially self-sufficient from the town in meeting its operating obligations and future infrastructure needs.

RK 02 **Moreover, the reason for expansion implies use by larger aircraft.**

The Projects are based on the need to reasonably accommodate existing and anticipated aviation demand for the current families of aircraft, FAA and MassDOT safety and security requirements, and Airport financial self-sufficiency. The Airport is not proposing infrastructure to support the use of larger families of aircraft.

RK 03 **To justify the expansion, the Airport Commission should have completed a cost-benefit analysis similar to that required under the FCC AIP. There appear to be three potential reasons: first, to accommodate larger planes, given current demand; second, to accommodate increased expected demand due to local air traffic (i.e., with a destination of Barnstable or Nantucket); or third, to accommodate larger planes in order for the Airport to assume a larger role in serving neighboring areas as a 'micro-hub'.**

No change to the size of the aircraft serving the Airport is proposed. Please see Section 2.2 for a detailed discussion on the need for the project.

RK 04 **With respect to the second issue of increased traffic to local destinations (i.e., the Cape and Nantucket) independent of the relative price effect, the source of the increased demand is unclear. There seem to be two potential sources: first, the offer of first class seating in a larger plane; and second, the expansion of existing on-Cape resorts or building of new resorts.**

See RK 03 above.

RK 05 **The apparent absence of the expansion of the Sagamore Bridge from Federal infra-structure legislation does imply that car traffic and bridge wait times will increase which will favor air traffic. However, if the Airport Commission supports the runway expansion to accommodate such increased demand, how does the**

Commission serve interests of year-round residents, particularly those under flight paths? Instead, if possible, the Commission should consider serving such interests by directly limiting landings or indirectly limiting by, for example, imposing an annual charge to recover expansion costs from all potential carriers, which while inefficiently discouraging entry serves the (equity) interests of year-round residents.

The leases and services offered at the Airport contribute to the economic output of the Airport and more importantly, to Barnstable and the Cape Cod region as a whole. Cape Air is the third largest employer in Barnstable (behind only Cape Cod Hospital and the municipality itself). MedFlight operates out of the Airport, providing key emergency response medical services, along with the U.S. Coast Guard (USCG). The Airport supports a total employment of 2,135 people with a total payroll of $85,358,000, money that is returned to the community in the form of purchases from local business, rent, taxes, etc. Please see a discussion of key Airport services in Section 1.3.

RK 06 **With respect to the third issue, changing the size and scope of the airport from one primarily serving the local market (i.e., the Cape and Nantucket) to one becoming a 'micro hub' which serves communities of the neighboring southern New England coast, this expansion could be driven primarily by the objectives of the current major air traffic provider on the Cape (i.e., Cape Air) to build a bigger business, but is this business objective one which necessarily serves the interest of a majority of year-round Town residents?.**

See responses above (RK 02, 03, 05).

SUSAN ASCHER (SA)

SA 01 **1. Pollution, both air and noise. The beaches are visibly dirtier and more polluted since Jet Blue began flying into Cape Cod. More aircraft, both large and small, would greatly compound the problem. Who wants dirty beaches and polluted air, not only on the beaches but throughout the Cape? The constant noise of aircraft over our houses and beaches is extremely annoying, starting at 6 am and continuing until late at night (I have heard planes after 10 pm - and do not live particularly close to the airport). This has a large impact on the quality of life for Cape residents.**

Comment noted. Air Quality and compliance with required Federal Clean Air Act standards is discussed in Sections 5.6 and 6.6.

SA 02 **Clear cutting the trees to allow for a larger airport will substantially add to the pollution and destruction of this beautiful, fragile ecosystem. We need trees, not asphalt! As for the usual 'business' reasons, there are already long waiting lines at most restaurants all summer long and plenty of 'no vacancy' signs.**

Tree removal is addressed within the greenhouse gas assessment in Section 6.4.1.4 relative to Land Alterations/Tree Removal. A larger airport is not proposed and no tree removal off property is proposed either.

SUSAN BRITA (SB)

SB 01 **The FAA did not adequately study the use of Otis Airforce Base as an alternative to expanding Hyannis. A transportation hub at Otis could have combined air, rail, water and other public transport modes at a point on the Cape where it made the most sense - before traffic gets deeply into the cape. Although the military does not like to "share" airports with civilian aircraft, Otis is large enough that separation could have been achieved.**

This alternative is discussed within Section 4.1.1.8 and is identified as Runway 15-33 Alternative 6 – Closure of Cape Gateway Airport and Operational Shift to Joint Base Cape Cod.

KAREN INGEMIE (KI)

KI 01 **FAA's current metric for quantifying noise exposure does not adequately capture the effects of aircraft noise on the lives of affected residents, their families or the current health issues associated with jet emissions and noise pollution.**

FAA is currently reviewing its noise policies. It has recently collected comments from the public relating to airport noise.

In September of 2023, the EA/EIR Project Team provided a courtesy reminder to all airport stakeholders of FAA's current noise policy review, the FAA is soliciting public input on a number of issues and questions concerning the impact of aviation noise exposure on communities in the vicinity of air transportation operations and overflight communities. https://www.faa.gov/noisepolicyreview

KI 02 **I handed Purvi Patel after the Environmental Assessment Meeting at the Airport, January 6th a USB drive showing multiple videos of planes flying over this area. On August 20, 2020 I recorded 28 planes flying between 1:28pm – 6:03pm. These videos show the actual path of aircraft and the flight track data I collected shows the airport flight tracking system is incorrect showing the wrong flight path.**

Comment noted. Cape Cod Gateway Airport is very conscious of its location in urbanized Barnstable and on the border of the Town of Yarmouth. It works cooperatively with the airlines and their pilots to reduce aircraft noise and maintain a constructive dialogue with neighbors who may be affected.

We direct the commenter to the Airport's Noise FAQ page for further assistance https://flyhya.com/pilot-info/noise-abatement/noise-faqs/

KI 03 **Were any health impact assessments done or environmental studies conducted in our area regarding flight patterns, frequency of traffic, effects of jet emissions, the risk factor of low altitudes aircraft flying over our homes and the decibel levels?**

The EA evaluated the effects of the Proposed Action on the quality of the human and natural environment in accordance with the CEQ and policies and procedures from the FAA such as Orders 5050.4B and 1050.1F. Health effect is considered by the FAA in their significant threshold limits. The EA concluded that the proposed Federal Action is consistent with existing national environmental policies and objectives as set forth in Section 101(a) of the NEPA, and environmental impacts will be less than significant and mitigable per current regulations. A Public Health Impact Assessment is not required.

KI 04 **Studies should be conducted to measure the health consequences of exposure to aviation noise, aircraft exhaust gases and exposure of PFAS and flight paths so families can have their quality of life back?**

This document addresses these considerations in compliance with MEPA's scope as detailed in the ENF Certificate provided in Appendix B and FAA Order 1050.1F.

KI 05 **Consideration should also be given to moving the airport to Otis AFB where the impact on the environment and residential quality of life would be less.**

This alternative is discussed within Section 4.1.1.8 and is identified as Runway 15-33 Alternative 6 – Closure of Cape Gateway Airport and Operational Shift to Joint Base Cape Cod.

GEORGE DOBLE (GD)

GD 01 **It seems that there was a hearing about expanding the airport for landing larger planes and that the hearing was not widely publicized and the hearing did not discuss issues and concerns that would be important to area properly owners.**

Public outreach efforts have been detailed within Section 9.2 - Public Outreach. Also, the airport maintains a webpage dedicated to the EA/EIR project and includes information on all upcoming meetings along with materials and recordings from past meetings https://flyhya.com/airport-info/environmental-assessment/. Furthermore, all public meeting information from the Master Plan process is also posted on the website at https://flyhya.com/master-plan/ including meeting recordings, slide shows and Frequently Asked Questions.

GD 02 **Expanding the airport for the benefit of a few to the detriment of most homeowners/taxpayers is unconscionable. I can't imagine those taxpayers who live closer to the airport to have to deal with this potential increase noise & risk. Yes, they purchased their homes knowing the closeness to the airport but to expand it to accommodate even larger aircraft should not be allowed.**

The proposed extension of Runway 15-33 is to meet the runway length needs of the existing families of aircraft currently using the airport. Please refer to Chapter 2: Purpose and Need for a discussion of how runway length requirements are determined.

GD 03 **As one exits route 6 at exit 7, driving … it almost seems one can reach out and touch the aircraft-I would not like to see any larger aircraft using this airport.**

Comment noted. Please see Section 3.3 for a discussion on proposed airspace control improvements as part of the Project.

Chapter 11.0

List of Preparers

11.0 LIST OF PREPARERS

This Draft EA/DEIR/DRI has been prepared under the direction of the Cape Cod Gateway Airport, along with Epsilon Associates, Inc., ASG, GEI Consultants, and HSH to fulfill the requirements of NEPA for the Cape Cod Gateway Airport Master Plan Improvements Project at Cape Cod Gateway Airport, Barnstable, MA.

The following persons authored and provided direct oversight for the preparation of this EA:

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Appendix A

Secretary's Certificate on the ENF

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January 23, 2023

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME	: Cape Cod Gateway Airport (formerly Barnstable Municipal Airport) Master Plan
PROJECT MUNICIPALITY	: Barnstable (Hyannis)
PROJECT WATERSHED	: Cape Cod
EEA NUMBER	: 16640
PROJECT PROPONENT	: Cape Cod Gateway Airport
DATE NOTICED IN MONITOR	: December 7, 2022

Pursuant to the Massachusetts Environmental Policy Act (M.G.L. c. 30, ss. 61-62L) and Section 11.06 of the MEPA Regulations (301 CMR 11.00), I hereby determine that this project **requires** the preparation of a mandatory Draft Environmental Impact Report (DEIR).

Project Description

As described in the Environmental Notification Form (ENF), the Proponent proposes several improvements to the Cape Cod Gateway Airport (Airport) in Hyannis as outlined in the 2020 Master Plan Update,[1] which evaluated aviation demand forecasts, facility requirements, airport access and geometry, and navigation aids over a 20-year planning horizon. According to the ENF, the Master Plan recommendations are needed to meet Federal Aviation Administration (FAA) airport safety standards as well future aviation demand, including rehabilitation of existing infrastructure. One of the main objectives of the Master Plan is to develop feasible and flexible alternatives to meet forecast demand. While the primary purpose of proposed improvements is safety, improvements also support future airport growth.

Components of the Master Plan (the "project" reviewed herein) include the following:

- Runway Extension
    - Extending both ends of Runway 15-33 by lengthening the Runway 15 end by ±895

[1] The 2020 Master Plan was approved in May 2022 by the Cape Cod Gateway Airport Commission, the Massachusetts Department of Transportation (MassDOT) – Aeronautics Division and the FAA. See https://flyhya.com/master-plan/

feet (with a 695-foot displaced threshold[2]) and the Runway 33 end by ±400 feet (with a 550-foot displaced threshold that includes the entire proposed extension along with the existing 150-foot existing displaced threshold)

- Runway Safety Area Enhancement
  - Installing a ±200-foot by 400-foot engineered material arresting system (EMAS)[3] to the safety area beyond the end of Runway 24
- Taxiway Modifications
  - Extending Taxiway A to meet the standards of a full-length parallel taxiway to Runway 15-33
  - Reconfiguring Taxiway D as a partial-length parallel taxiway with a 400-foot standard separation east of Runway 15-33 from Taxiway B to Taxiway A1
  - Constructing a run-up area along the north side of the new partial parallel Taxiway D
  - Removing Taxiway D between Taxiway A and the new partial parallel Taxiway D
  - Removing Taxiway E and the existing Taxiway E runup pit
  - Removing existing Taxiway B and moving/extending it to a standard 400-foot separation south of Runway 6-24 with two midfield taxiways to Runway 6-24 and a northern taxiway spanning Runway 6-24 to Taxiway C
  - Removing Taxiway C1 between Taxiway C and Runway 6-24
  - Removing Taxiway D between Taxiway B and Runway 6-24
- Expanding the existing 43,097 square foot (sf) terminal building by 30,600 sf for current and future demand (this is the only terminal building at the Airport)
- General Aviation (GA) improvements for apron and/or hangar development
  - East Ramp: ±8.7 acres of land
  - North Ramp: ±31.3 acres of land
- Easement acquisition for existing and future airspace surfaces to control and remove obstruction as necessary for aviation safety and compliance with FAA standards

The Master Plan will be constructed in three phases as funding is allocated in capital improvement plans. Phase 1 covers the short-term airport growth (2022 to 2026) and includes relocation and extension of Taxiway B, reconstruction and realignment of Taxiways D and E at Runway 15 (including run-up pit), upgrades to the terminal, and runway extension easements. Phase 2 covers the medium-term airport growth (2027 to 2031) and includes clearing trees for Runway 15-33 Extension, as well as extension of Runway 15-33 and Taxiway A (including new taxiway A1 and A4). Phase 3 covers the long-term airport growth (2032 to 2040) and includes installation of Runway 24 EMAS.

Project Site

The Cape Cod Gateway Airport (the "Airport" or "project site") is located in Hyannis on Cape Cod. The Airport is bordered by a Massachusetts Fish and Wildlife designated conservation area and Route 6 to the north, Barnstable Road (Route 132) to the south, Yarmouth Road to the west, and an industrial park (Independence Park) to the east. The Airport is owned by the Town of Barnstable (Town) and provides commercial and GA services to Boston, New York and the islands of Martha's Vineyard

[2] A displaced threshold is a threshold located at a point on the runway other than the designated beginning of the runway. Displacement of a threshold reduces the length of runway available for landings. The portion of runway behind a displaced threshold is available for takeoffs in either direction and landings from the opposite direction.

[3] EMAS uses crushable material placed at the end of a runway to stop an aircraft that overruns the runway. The tires of the aircraft sink into the lightweight material and the aircraft is decelerated as it rolls through the material.

and Nantucket. It is managed by the Cape Cod Gateway Airport Commission and airport staff. The Airport is zoned for Business and Industrial uses. Land uses surrounding the Airport property include agriculture, commercial, industrial, mixed uses, open land, and residential.

The Airport encompasses ±639 acres of land, of which ±140 acres is developed for airport facilities and operations including a single 43,097 sf Passenger Terminal Building, Air Traffic Control Tower (ATCT), parking facilities, aircraft ramps, hangars, runways, taxiways, an Airport Rescue and Fire Fighting (ARFF) building and an aircraft fuel farm. More than 45 private tenants lease space on parts of the Airport property. The Airport includes two runways: Runway 15-33 is 5,255 feet long by 150 feet wide and is aligned in a northwest to southeast direction and Runway 6-24 is 5,425 feet long by 150 feet wide and is aligned in a southwest to northeast direction.

Approximately 460 acres of the Airport are undeveloped areas consisting of upland evergreen and deciduous forests, wetlands, and two ponds (Upper Gate Pond and Lewis Pond) to the north. The forested communities are located north of the intersection between the two runways, with smaller patches of forested lands northwest of the Runway 15 end and southeast of Runway 6-24. Several of the small, isolated freshwater wetlands located on or immediately adjacent to Airport property are identified as Potential Vernal Pools (PVPs). The project site is located within Cape Cod's public drinking water supply's wellhead protection areas (Zone II). According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, the vast majority of the Airport is within Zone X, an area of minimal flood hazard determined to be outside the 500-year flood (panels 25001C0566J and 25001C0567J, effective July 16, 2014); however, a small section of forested area near Mary Dunn Pond, within the Airport property, is within an area with a 0.2% annual chance of flood hazard.

The Airport contains areas mapped as Estimated Habitat of Rare Wildlife, Certified Vernal Pools and/or Priority Habitat of Rare Species as designated by the Massachusetts Natural Heritage and Endangered Species Program (NHESP). However, these areas are not within the limits of the proposed improvements described in the Master Plan. No federally identified critical habitats are located at the Airport. The project site supports habitat for many bird species, both resident and migratory, including several birds that are protected under the Migratory Birds Treaty Act of 1918 and/or the Bald Eagle and Golden Eagle Protection Act of 1940.

The project site is within the Designated Geographic Area (DGA) of Environmental Justice (EJ) populations[4] located in whole or in part within 1 mile of the project site as stated in 301 CMR 11.02 (definition of "DGA"). I note that, as of November 12, 2022, the Executive Office of Energy and Environmental Affairs (EEA) published an updated EEA EJ Maps Viewer ("*Updated 2020 Environmental Justice Block Groups*" tab), which indicates that the project site is now located within one EJ population characterized by Minority and Income, which was not previously mapped; within 1 mile of 11 EJ populations characterized by Minority, Income, Minority and Income, and Minority, Income and English Isolation (eight in Barnstable and three in Yarmouth), some of which were not previously mapped; and within 5 miles of 17 EJ populations characterized by Minority, Income, Minority and Income, and Minority and English Isolation (10 in Barnstable and seven in Yarmouth), some of which were not previously mapped.

[4] "Environmental Justice Population" is defined in M.G.L. c. 30, § 62 under four categories: Minority, Income, English Isolation, and a combined category of Minority and Income.

Environmental Impacts and Mitigation

Potential environmental impacts of the project include alteration of ±63 acres of land, creation of 21 acres of impervious area and permanent alteration of wetland resource areas associated with Upper Gate Pond, preliminarily estimated as 396 linear feet (lf) of Bank, 3,427 sf of Bordering Vegetated Wetlands (BVW), and 23,654 sf of Land Under Water (LUW). The 30,600-sf terminal building expansion may generate new vehicle trips, increase water use, generate wastewater and emit greenhouse gasses (GHG) associated with energy use and transportation; these impacts were not quantified in the ENF and must be described in the DEIR.

Measures proposed to avoid, minimize and mitigate environmental impacts include installation of roof mounted solar arrays on hangars; implementation of electric vehicle (EV) charging stations and electric aircraft charging stations (as technology advances); construction of a stormwater management system with Best Management Practices (BMPs) to improve water quality, reduce flow rates and infiltrate runoff; and construction-period BMPs to minimize noise, air and water quality impacts including construction of a blast fence/wall next to the proposed run-up pad for noise protection. The project must be described and analyzed in greater detail in the DEIR in accordance with the Scope below.

Permitting and Jurisdiction

The project is undergoing MEPA review and is subject to a mandatory EIR pursuant to 301 CMR 11.03(1)(a)(1)[5] and 11.03(1)(a)(2) because it requires Agency Actions and will result in direct alteration of 50 or more acres of land and creation of 10 or more acres of impervious area, respectively. The project is also required to prepare an EIR pursuant to 301 CMR 11.06(7)(b) because it is located within a DGA (1 mile) around one or more EJ Populations. The project exceeds ENF thresholds at 11.03(6)(b)(3) for expansion of an existing runway at an airport, 11.03(6)(b)(4) for construction of a New taxiway at an airport, and 11.03(3)(b)(1)(f)[6] for alteration of one-half or more acres of other wetlands (LUW). The project requires a Section 401 Water Quality Certification (WQC) from the Massachusetts Department of Environmental Protection (MassDEP). It is subject to the MEPA GHG Emissions Policy and Protocol.

The project will require an Order of Conditions from the Barnstable Conservation Commission (or in the case of an appeal, a Superseding Order of Conditions (SOC) from MassDEP), submittal of a pre-construction notification (PCN) to the U.S. Army Corps of Engineers (ACOE) seeking authorization under the General Permits (GP 10 – Linear Transportation Projects) for Massachusetts in accordance with Section 404 of the Federal Clean Water Act, review by the Massachusetts Historical Commission (MHC) pursuant to Section 106 of the National Historic Preservation Act of 1966, review by FAA, Section 7 Consultation with the U.S. Fish and Wildlife Service (USFWS) under the U.S. Endangered Species Act, preparation and review of an Environmental Assessment under the National Environmental Policy Act (NEPA), and a National Pollutant Discharge Elimination System (NPDES) Stormwater General Permit and Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP) from the U.S. Environmental Protection Agency (EPA). The project is a Development of Regional Impact (DRI) which will be reviewed by the Cape Cod Commission.

[5] The ENF did not identify that the project will exceed this threshold based on alteration of greater than 50 acres of land.
[6] The ENF did not identify that the project will exceed this threshold based on alteration of greater than 0.5 acres of LUW.

The Proponent has received and may seek additional Financial Assistance through the Massachusetts Department of Transportation (MassDOT) Aeronautics Division ($7.5 million over a 20-year period). Therefore, MEPA jurisdiction is broad and extends to all aspects of the project that are likely, directly or indirectly, to cause Damage to the Environment, as defined in the MEPA regulations.

Review of the ENF

The ENF includes a project description, an analysis of alternatives, existing and proposed conditions plans, and a review of its impacts and proposed mitigation measures. Consistent with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency, the ENF contains an output report from the MA Climate Resilience Design Standards Tool prepared by the Resilient Massachusetts Action Team (RMAT) (the "MA Resilience Design Tool"),[7] together with information on climate resilience strategies to be undertaken by the project.

Comments from the Town of Yarmouth identify additional analyses regarding the purpose and need of proposed improvements, runway extension alternatives, noise analysis and mitigation, and water quality. Numerous comments from residents of Barnstable and Yarmouth identify concerns with expansion of the runways at the Airport and other project elements because of the project's potential impacts, including both existing levels of noise and air pollution generated from airplane operations and projected noise and air pollution associated with expansion of runways and increased flight activity. Comments also raise concerns about potentially outdated noise analyses; the purpose and need for the project; groundwater pollution from the Airport and potential downstream contamination within public water supply wells including per- and poly-fluoroalkyl substances (PFAS); and lack of community engagement.

SCOPE

General

The DEIR should follow Section 11.07 of the MEPA regulations for outline and content and additional information and analyses required by this Scope. It should clearly demonstrate that the Proponent will pursue all feasible measures to avoid, minimize and mitigate Damage to the Environment to the maximum extent feasible.

Project Description and Permitting

The DEIR should provide a detailed description of all project activities. It should include plans of existing and proposed conditions at a legible scale that clearly identify all major project components (existing and proposed buildings, access roadways, runways, taxiways, etc.), public areas, impervious areas, subsurface utilities, surface elevations, wetland resource areas, rare species habitat, ownership of parcels including easements, and stormwater and utility infrastructure. Conceptual plans should be provided for onsite work as well as any proposed off-site work for transportation or utility improvements that will benefit the project. The DEIR should clearly describe the number, location and size of existing avigation easements and proposed avigation easements that will be acquired. It should **MEPA 01** **MEPA 02** **MEPA 03**

[7] https://resilientma.org/rmat_home/designstandards/

identify any changes to activities contemplated under the Master Plan, including changes in proposed phasing or additional proposed activities, since the filing of the ENF. The DEIR should identify and describe applicable state, federal and local permitting and review requirements associated with the project and provide an update on the status of each of these pending actions. The DEIR should include a description and analysis of applicable statutory and regulatory standards and requirements, and a discussion of the project's consistency with those standards. **MEPA 04** **MEPA 05** **MEPA 06**

To provide context for the proposed activities under the Master Plan, the DEIR should provide an overview of the airport's functions and activities related to GA and commercial services, with a focus on the role each of the project components plays in the operation of the airport. It should provide a general description of airport operations, including hours of operation, conditions under which each runway is used, airplane taxiing and parking, and use of hangars and other Airport buildings. It should include data on past (at least for the last 15 years), current and projected levels of passenger volumes and aircraft operations on both an annual basis and for peak summer months, so as to provide a clear and full justification for the need to expand runway and taxiway capacity to accommodate projected airport and passenger growth over time. The DEIR should clarify which project components are intended to support a growth in airport operations, and how implementation of each project component will be phased to accommodate growth projections over a specified time horizon. It should clearly identify relevant FAA design guidelines or standards to be addressed by each project, as applicable. It should describe the existing terminal building and proposed expansion. **MEPA 07** **MEPA 08** **MEPA 09** **MEPA 10** **MEPA 11** **MEPA 12**

Alternatives Analysis

According to the ENF, the build alternatives reviewed would accommodate the forecasted aviation demand presented in the Master Plan and satisfy the corresponding facility requirements, meet applicable FAA design standards, and provide methods to meet local constraints and address community concerns. According to the ENF, the project is proposed to comply with Part 77 airspace regulations, improve safety, and improve future airport operation and residential compatibility. Prior to submission of the ENF, the Master Plan initially analyzed alternatives against Level 1 screening criteria (i.e., creates disproportionate burden, immediate vicinity community and infrastructure constraints, costs) followed by Level 2 screening criteria (i.e., meets FAA standards, meets facility requirements, constructability, operational impacts). An additional three levels of screening remain and will be evaluated through the remainder of MEPA review: Level 3 (environmental impacts), Level 4 (broader community impacts) and Level 5 (cost). The alternatives conceptually reviewed below include those related to Airside Alternatives, Terminal D Alternatives, Runway 6-24 Alternatives, and Terminal Building Alternatives. These alternatives were reviewed solely with respect to Level 1 and 2 screening criteria and did not comprehensively consider environmental impacts (Level 3 criteria). The alternatives analysis should be supplemented in the DEIR to provide a full comparison of environmental impacts for each category of alternatives described below. **MEPA 13**

Airside Alternatives

The ENF identifies four Airside Alternatives including the No Build, FAA Recommended Length (Alternative 2), FAA Recommend Length with Displaced Thresholds (Alternative 3), and the Preferred Alternative (as described herein). It provides a limited analysis of these alternatives which does not include plans for Alternatives 2 or 3 or a detailed comparison of impacts in a narrative or tabular format. In all the build alternatives, Taxiway A would extend to the new runway ends and connect to the runway at a 90-degree angle and the Proponent would need to acquire all areas within the **MEPA 14**

taxiway object free areas (TOFAs) and relocated perimeter road located off Airport property when the land becomes available on a willing seller basis. The ENF indicates that the No Build Alternative was dismissed because it does not meet the existing and future facility requirements related to runway length. Alternative 2 would extend the Runway 15 end by 1,295 feet and Runway 33 end by 400 feet. Alternative 2 meets the requirement of 6,000 feet of both accelerated stop distance available (ASDA) and landing distance available (LDA) in both runway directions. However, this alternative does not meet FAA standards because relocating the Runway 15 landing threshold would require obstruction removal with Victory Chapel (a house of worship), an incompatible land use, within the runway protection zone (RPZ). In addition, obstructions (above ground utilities, man-made structures, and natural obstructions) that would need to be removed or lowered for this alternative make constructability challenging and costly. Alternative 3 would extend the Runway 15 end by 1,258 feet (with a 1,058-foot displaced landing threshold) and the Runway 33 end by 400 feet (with a 550-foot displaced threshold). Alternative 3 results in reduced obstruction impacts and enhanced land use compatibility compared to Alternative 2, meets the Runway 33 length need, and improves the Runway 15 landing distance by 200 feet (although it does not meet the Runway 15 recommended LDA of 6,000 feet). The Preferred Alternative would extend the Runway 15 end by 895 feet (with a 695-foot displaced landing threshold) and the Runway 33 end by 400 feet (with a 550-foot displaced threshold). While it does not meet the Runway 15 recommended LDA of 6,000 feet, it improves the LDA by 200 feet compared to existing conditions. The Preferred Alternative results in reduced obstruction impacts and enhanced land use compatibility compared to Alternative 2 and creates less impervious area compared to Alternatives 2 and 3.

Taxiway D Alternatives

Taxiway D Alternatives include the No Build and two build alternatives to improve multiple existing non-standard geometry conditions. The No Build Alternative does not meet the existing and future facility requirements related to taxiway geometry and enhancements and was dismissed. The Preferred Alternative proposes to construct a partial parallel taxiway with a 400-foot standard separation east of Runway 15-33 from Taxiway B to existing Taxiway A1 and includes removal of Taxiway D between Taxiway A and this new parallel taxiway to prevent any operational concerns of two-way taxiing occurring in front of the terminal building and eliminates direct access from three points. The Preferred Alternative would construct a run-up area along the north side of the proposed partial parallel taxiway to replace the existing Taxiway E run-up pit that will be removed (Taxiway E is also removed). The current run-up pit is at a lower elevation and surrounded by trees, which shield neighboring communities from the run-up sound impact. A blast fence/wall will be constructed next to the proposed run-up pit both for blast protection as well as noise protection. The proposed layout for Taxiway D will impact BVW, Bank, and LUW associated with Upper Gate Pond. Two design options for limiting resource area impacts to Upper Gate Pond include conventional fill on the north side of the taxiway with steep side slopes to limit the extent of impacts and a concrete retaining wall to further limit the extent of impacts. The DEIR should further quantify the constructability, cost, and environmental impacts for each design option identified. Alternative 3 is similar to the Preferred Alternative but would maintain the run-up pad in its existing location and includes the removal of Taxiway D between Taxiway A and the proposed new parallel taxiway to prevent any operational concerns of two-way taxiing occurring in front of the terminal building and eliminates direct access from only two points but still has a high-energy crossing on Runway 15-33. Although it improves conditions compared to the No Build Alternative by providing a standard 400-foot runway-taxiway centerline separation and improves nonstandard FAA geometry conditions (eliminates non-standard runway taxiway intersection angles, the y-shaped runway crossing, and direct access), it does not fully meet FAA geometry standards due to the high-energy crossing.

Runway 6-24 Alternatives

The ENF only evaluates the Preferred Alternative for Runway 6-24 Modifications to improve multiple existing non-standard geometry conditions and the No Build Alternative, which does not meet the existing and future facility requirements related to runway geometry. The Preferred Alternative would include:

- moving Taxiway B to a standard 400-foot separation from Runway 6-24 to reduce taxi time and open up additional land for aeronautical development potential
- constructing a perpendicular crossover taxiway south of the existing glide slope (3,480 feet from the Runway 6 threshold) so the new taxiway's TOFA remains clear of the glide slope
- removing Taxiway C1 and keeping the portion of Taxiway B connecting to Runway 6-24
- constructing a midfield taxiway to Taxiway B
- keeping Taxiway D exit to Taxiway C as an acute-angled exit only taxiway, which also adds an EMAS beyond the existing Runway 6 departure end (near the Runway 24 threshold)

The Preferred Alternative meets FAA design standards by providing a standard 400-foot runway-taxiway centerline separation, eliminating high energy intersections, and addressing direct access and non-standard runway-taxiway intersection angles; it also meets facility requirements by minimizing taxi distance and opening up space available for aviation development currently not available due to the larger than standard Runway 6-24 to Taxiway B separation. The ENF indicates that this alternative would add 27 acres of new impervious pavement; however, the Summary Table in the ENF also notes that the total impervious creation would be 21 acres for all proposed improvements in the Master Plan. The DEIR should confirm the total amount of impervious area creation. **MEPA 15**

Terminal Building Alternatives

Terminal Building Alternatives include the No Build and two build alternatives. The No Build Alternative would not create additional impacts. However, this alternative was dismissed because studies of various 'interior-only' reconfiguration options were unsuccessful in resolving all space deficiencies identified in the 150 peak hour passenger analysis and it is not viewed as a viable long-term solution to accommodate the passengers and operational needs for the forecasted demand. The Preferred Alternative reconfigures existing interior space for maximum efficiency of use and plans for isolated building additions of 5,000 to 20,000 sf to accommodate increased passenger and baggage demand in key areas. Interior reconfiguration allows for the additions to be smaller than would otherwise be required and maintains the basic terminal organization: a single terminal with secure departures to the south, arrivals/non-secure departures to the north, with airline operations/ticketing in the center. This alternative would accommodate phased implementation to allow improvements to begin with interior reconfiguration for maximum efficiency and in the future, follow-on with one or multiple isolated space additions, as appropriate, to meet demand and as funding becomes available. Alternative 3 would change the functional organization of the terminal building with no additional square footage. Rather than a single terminal with departures and arrivals at each end, the terminal would be reorganized to be a secure terminal on the south end (with both departures and arrivals/bag claim functions), and an attached, but functionally independent, non-secure terminal at the north end with its own departures and arrivals/bag claim functions for non-secure flights. This alternative would improve passenger flow, allowing secure arrivals/departures to remain contained at one end of the terminal and eliminating the

need for secure arrivals to traverse the ramp or terminal to access baggage claim at the north end. This alternative was dismissed because capital and operational costs for duplication of baggage claim is not warranted by the level of air traffic and the future of the non-secure departures is uncertain, as security requirements may change over time.

The objective of the MEPA review process is to provide disclosures of all feasible measures to avoid, minimize and mitigate Damage to the Environment. Consistent with that goal, an alternatives analysis is required to consider what effect changing the parameters and/or siting of a project, or components thereof, will have on the environment. **MEPA 16**

The DEIR should clearly identify the purpose and need of each project. Several of the proposed improvements will be designed to meet FAA safety guidelines; however, improvements are also intended to facilitate future growth in airport operations. The DEIR should clearly evaluate the basis for the proposed improvements, particularly the proposed runway length. The DEIR should describe how much expansion is anticipated in each of the three phases within the 20-year period. The DEIR should describe the relevant safety guidelines and how the proposed design will achieve safety goals. For each of the runway and taxiway improvements, the DEIR should identify one or more alternatives that minimize land alteration and impervious area and direct impacts to wetlands and evaluate these alternatives with respect to the FAA safety guidelines. For improvements that are not directly safety-related, the DEIR should identify any alternative configurations or locations that would avoid or minimize impacts to land alteration and impervious area. For the alternatives that were studied in the ENF (described above), the DEIR should quantify the environmental impacts of each alternative, and provide a clear explanation of why the Preferred Alternative was chosen when considering the relative environmental impacts of each of the studied alternatives. The alternatives analysis and project narrative should support the selection of the Preferred Alternative for each project component that includes all feasible measures to avoid Damage to the Environment, or to the extent Damage to the Environment cannot be avoided, to minimize and mitigate Damage to the Environment to the maximum extent practicable. **MEPA 17** **MEPA 18** **MEPA 19** **MEPA 20** **MEPA 21** **MEPA 22** **MEPA 23**

The DEIR should provide a detailed comparison of the alternatives, including more detailed descriptions and plans of each alternative. It should compare the environmental impacts of each alternative, quantitatively to the extent practicable, with respect to trip generation, parking supply, water use, wastewater generation, wetlands, impervious area and GHG emissions. The comparison should be provided in the narrative and in a tabular format. **MEPA 24**

The DEIR should address comments from the Town of Yarmouth regarding the purpose and need for the project. It should also analyze the feasibility of runway extension alternatives that provide the required runway length and consider balancing community aircraft noise impacts by factoring in location and density of residential development in areas surrounding the Airport. **MEPA 25**

Environmental Justice

As noted above, the project site is within the DGA of several EJ populations located in whole or in part within 1 mile of the project site. The updated EEA EJ Maps Viewer indicates that the project site is now located within one EJ population characterized by Minority and Income, which was not previously mapped; within 1 mile of 11 EJ populations characterized by Minority, Income, Minority and Income, and Minority, Income and English Isolation (eight in Barnstable and three in Yarmouth), some of which were not previously mapped; and within 5 miles of 17 EJ populations characterized by **MEPA 26**

Minority, Income, Minority and Income, and Minority and English Isolation (10 in Barnstable and seven in Yarmouth), some of which were not previously mapped. The project site is within 5 miles of a total of 19 EJ block groups. Languages identified as spoken by five percent or greater of residents in any census tract in which the identified 18 EJ populations are located, who also identify as not speaking English "very well," include Portuguese or Portuguese Creole and Spanish or Spanish Creole.[8]

Effective January 1, 2022, all new projects in DGAs as defined in 301 CMR 11.02, as amended around EJ populations are subject to new requirements imposed by Chapter 8 of the Acts of 2021: *An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy* ("Climate Roadmap Act") and amended MEPA regulations at 301 CMR 11.00.[9] Two related MEPA protocols – the MEPA Public Involvement Protocol for Environmental Justice Populations ("MEPA EJ Public Involvement Protocol") and MEPA Interim Protocol for Analysis of Project Impacts on Environmental Justice Populations ("MEPA Interim Protocol for Analysis of EJ Impacts") – are also in effect for new projects filed on or after January 1, 2022.[10] Under the new regulations and protocols, all projects located in a DGA around one or more EJ populations must take steps to enhance public involvement opportunities for EJ populations, and must submit analysis of impacts to such EJ populations in the form of an EIR. **MEPA 27**

Consistent with the MEPA EJ Public Involvement Protocol, the Proponent sent advance notification of the project in the form of an EJ Screening Form to a "EJ Reference List" provided by the MEPA Office and consisting of Community Based Organizations (CBOs) and tribes/indigenous organizations; the EJ Screening Form was translated into Portuguese and Spanish. The MEPA remote consultation meeting and in-person site visit notice (with translations in Portuguese and Spanish) was distributed to the EJ Reference List.

The DEIR should include a separate section on "Environmental Justice," and contain a full description of measures the Proponent intends to undertake to promote public involvement by such EJ populations during the remainder of the MEPA review process, including a discussion of any of the best practices listed in the MEPA EJ Public Involvement Protocol that the project intends to employ. The DEIR, or a summary thereof, should be distributed to all CBOs and tribes included in the EJ Reference List that was used to provide notice of the ENF. The Proponent should obtain a revised EJ Reference List from the MEPA Office to ensure that contact information is updated. I note that the purpose of the *MEPA Public Involvement Protocol* is to require direct and meaningful engagement with EJ populations, including low-income and minority residents as well as those who identify as not speaking English well who lack resources to fully participate in public processes. The Proponent is strongly encouraged to develop public involvement strategies that go beyond reliance on local permitting procedures and seek meaningful input from EJ populations that may be affected by the project. Translation services should be offered in all the languages identified above. **MEPA 28**

The DEIR should include a baseline assessment of any existing unfair or inequitable Environmental Burden and related public health consequences impacting EJ Populations in accordance with 301 CMR 11.07(6)(n)1 and the MEPA Interim Protocol for Analysis of EJ Impacts. Specifically, the DEIR should use the DPH EJ Tool to identify any census tract or municipality in which the EJ **MEPA 29**

[8] The new mapping reflected in the EEA EJ Maps Viewer took effect for MEPA filings on January 4, 2023. Given that this is a new project filing where the Scope issued today will dictate analysis for future EIRs, I find it appropriate to include the new mapping to determine the scope of analysis relative to environmental justice.
[9] MEPA regulations have been amended to implement Sections 55-60 of the Climate Roadmap Act and took effect on December 24, 2021.
[10] Available at https://www.mass.gov/service-details/eea-policies-and-guidance.

populations are located as exhibiting "vulnerable health EJ criteria"; this term is defined in the DPH EJ Tool to include any one of four environmentally related health indicators that are measured to be 110% above statewide rates based on a five-year rolling average. In addition, sources of potential pollution should be identified within the identified EJ populations, based on the mapping layers available in the DPH EJ Tool. MEPA 30

The DEIR should provide an estimate of the increase in vehicular traffic that may be associated with the proposed terminal building expansion, as well as the total number of adt of diesel vehicles that the project is anticipated to generate including during construction. MEPA 31 The DEIR should describe the anticipated routes of travel for project-generated vehicular traffic to determine whether such traffic would extend near EJ populations, and should discuss whether air quality may be affected in those neighborhoods. MEPA 32 The DEIR should discuss the extent to which Transportation Demand Management (TDM) measures will serve to reduce vehicle traffic, associated with project operations and construction. MEPA 33 The DEIR should also discuss other potential mitigation, such as measures to discourage single occupancy vehicle (SOV) trips to the airport by passengers and visitors and installation of electric vehicle (EV) infrastructure on site. MEPA 34

The DEIR should also analyze land alteration and impervious surfaces added by the project, including implications for potential stormwater flooding and urban heat island effects in the surrounding neighborhoods. MEPA 35 Consistent with the Scope related to Climate Change and Land Alteration below, analysis of the stormwater management system should specifically assess whether flooding risks may be exacerbated for nearby EJ populations, including under future climate conditions, and whether existing conditions would be worsened or improved by the project design. MEPA 36 The DEIR should assess whether tree removal near EJ populations may affect urban heat island effects, and should discuss whether anticipated growth in airport operations may disproportionately affect EJ neighborhoods in terms of noise, air pollution, and traffic. MEPA 37 The DEIR should analyze any other relevant short-term and long-term environmental or public health impacts of the project, including construction period activities. MEPA 38 If any disproportionate adverse effects or increased risks of climate change are identified, the DEIR must include a discussion of proposed mitigation and include such measures in draft Section 61 findings. MEPA 39 I note that generalized project benefits should not be analyzed to "net out" project impacts, unless the benefit serves to mitigate the specific impact analyzed. Particular focus should be given to benefits that serve to promote the equitable distribution of Environmental Burdens, or reduce any existing Environmental Burdens identified for the EJ population. MEPA 40

Public Health

The DEIR should include a separate section on "Public Health," and discuss any known or reasonably foreseeable public health consequences that may result from the environmental impacts of the project. MEPA 41 Particular focus should be given to any impacts that may materially exacerbate "vulnerable health EJ criteria," in accordance with the MEPA Interim Protocol for Analysis of EJ Impacts. In addition, other publicly available data, including through the DPH EJ Tool, should be surveyed to assess the public health conditions in the immediate vicinity of the project site, in accordance with 301 CMR 11.07(6)(g)10. Any project impacts that could materially exacerbate such conditions should be analyzed. To the extent any required Permits for the project contain performance standards intended to protect public health, the DEIR should contain specific discussion of such standards and how the project intends MEPA 42 to meet or exceed them. As discussed below, the DEIR should contain a comprehensive discussion of MEPA 43 PFAS contamination on site, and should assess whether such contamination or cleanup activities will disproportionately affect EJ neighborhoods or other vulnerable populations near the site.

Noise

The ENF indicates that the proposed improvements in the Master Plan are intended to support future expansion of airport operations and passenger traffic. Such expansion will result in increased noise impacts on surrounding neighborhoods. Comments received from abutters identify concerns with the existing level of noise experienced in communities along the flight paths which impacts residents, as well as the level of noise associated with future expansion of airport operations. These comments further indicate that the use of average annual day-night aircraft noise contours (Ldn or DNL) is insufficient to address their concerns. The DEIR should provide a detailed response to the comments from the Town of Yarmouth and residents regarding existing and proposed aircraft noise including an aircraft noise analysis and noise mitigation. **MEPA 44**

The DEIR should include an assessment of noise levels associated with existing airport operations, as well as anticipated increases that are projected as a result of future expansion of the airport in Phases 1, 2, and 3. The noise analysis should determine the increase in noise levels caused by operations at the Airport over the 20-year period described in the Master Plan. It should describe existing noise levels, identify all noise-generating activities and components of the project and model noise levels under proposed conditions. The DEIR should discuss what regulatory requirements, such as FAA guidelines or MassDEP regulations or policies, apply to noise impacts of airport operations. The DEIR should discuss whether noise impacts are likely to disproportionately affect surrounding EJ neighborhoods or other vulnerable populations (including those that may be considered "sensitive receptor") and what mitigation could be considered to minimize the noise impacts of airport operations. For instance, the DEIR should discuss whether hours of operations could be adjusted to minimize noise impacts, particularly during nighttime hours. The DEIR should analyze the mitigation recommended in the Town of Yarmouth's comments. **MEPA 45** **MEPA 46** **MEPA 47** **MEPA 48** **MEPA 49**

The Town of Yarmouth's comment letter requests that aircraft noise impacts include the average annual day-night contours shown as the 55 Ldn through 80 Ldn in five-level increments, as well as single-event contours for the same Ldn increments as applicable to a range of aircraft types (identified in comments); comparable aircraft models should be used if the FAA noise model database does not include these aircraft types. The DEIR should present these contours for the existing flight routes commonly flown at the Airport on each of the four runway ends, and for any future flight path recommended for aircraft noise mitigation measures. The intent of these single-event aircraft noise is to better reflect the aircraft noise impact that residents experience on a daily basis. **MEPA 50**

Land Alteration, Impervious Area and Stormwater

The project will cumulatively alter 63 acres of land and create up to 21 acres of impervious area. The project will remove a substantial number of existing mature trees from the site and within areas of proposed easements, which will be acquired. The DEIR should provide an updated table which quantifies the land alteration and impervious area associated with each project component in a tabular format. The DEIR should clarify the amount of alteration including the type of vegetation that will be cleared (i.e., mature trees, scrub shrub, etc.). It should clarify the location, type and amount of alteration in previously undisturbed areas. The DEIR should identify how the project is designed to avoid and minimize land alteration and impervious area. It should provide a comprehensive evaluation of all measures preserve open space and tree cover, to reduce the amount of land alteration, and to convert impervious areas to pervious materials, including reductions in pavement associated with runways and **MEPA 51** **MEPA 52**

taxiways, reductions in size of aprons and hangars, and supplemental landscaping or tree planting to mitigate impacts associated with clearing. The DEIR should quantify open space that will remain undisturbed and/or restored upon completion of construction. The DEIR should include site plans that clearly locate and delineate areas proposed for development and those to be left undisturbed. MEPA 53 MEPA 54

The DEIR should identify all easements and public utilities on-site and off-site and provide information on the parties to the easements and location and condition of public infrastructure. It should describe any constraints on project design or use of the site posed by these conditions. MEPA 55

According to the ENF, proposed stormwater management for individual project phases will comply with current MassDEP regulations. Mitigation will include stormwater BMPs such as groundwater recharge including infiltration basins, infiltration trenches, and/or detention basins. All BMPs will comply with standards necessary for work in Critical Area associated with the EPA-designated Sole Source Cape Cod Aquifer and Zone II to water supply wells in the Town. Stormwater runoff from the project limits will be managed using the Airport's existing stormwater management system and installing new drainage culverts. Runoff will be managed to reduce peak stormwater runoff and provide treatment with both temporary and permanent BMPs during and after construction. Temporary BMPs will include silt socks, silt fences, inlet protection, and stabilized construction entrances. Post-construction BMPs may include swales, bioretention areas, infiltration basins, catch basins with sediment traps and oil and water separators.

The DEIR should identify all measures that will be employed to protect the water quality of the sole source aquifer, provide a description of the proposed stormwater management system for each project/phase and identify BMPs that will be incorporated into its design. The DEIR should describe how the proposed stormwater management system will fully comply with the MassDEP Stormwater Management Standards (SMS). Given the significant amount of impervious area to be added to the project site, the Proponent should take all feasible measures to manage stormwater runoff, including by exceeding stormwater management standards and incorporating Low Impact Design (LID) strategies and green infrastructure wherever practicable; such measures should be described in the DEIR. Green infrastructure is an effective way to treat stormwater generated by impervious surfaces and provide cooling and other benefits for the community and should be extensively incorporated into the warehouse building, parking lots, and other paved areas to the maximum extent possible. LID designs should be carefully considered, and where not used, the DEIR should provide a thoughtful explanation as to why they are infeasible for implementation on-site. The DEIR should describe the extent to which the project will preserve existing tree canopies and plant additional trees, including estimates of the number of trees that will be planted. The DEIR should demonstrate the system will be designed to accommodate larger storm events. The DEIR should provide quantitative modeling and analysis to assess the rainfall volumes that will be accommodated by the stormwater design, including under future climate conditions. It should include a plan showing the location of BMPs. Additional requirements related to climate change adaptation and resiliency are discussed below. MEPA 56 MEPA 57 MEPA 58 MEPA 59 MEPA 60 MEPA 61 MEPA 62 MEPA 63

The DEIR should identify any infiltration systems that may require registration under MassDEP's Underground Injection Control (UIC) program. According to MassDEP, the Airport is operating without the required NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP). The DEIR should address how the Airport will seek required MSGP permitting and describe how the project will comply any applicable NPDES performance standards related to discharges of pollutants from airplane deicing operations and other discharges covered by the MSGP. The DEIR should use available water quality monitoring data from MEPA 64 MEPA 65 MEPA 66

the Upper Gate and Lewis Ponds to demonstrate whether installed stormwater management systems are performing as designed in these areas.

Wetlands

The Barnstable Conservation Commission will review the project for its consistency with the Wetland Protection Act (WPA), the Wetlands Regulations (310 CMR 10.00) and associated performance standards, including the SMS. According to the ENF, realignment of Taxiway D will impact wetland resource areas associated with Upper Gate Pond including Bank, LUW and BVW. Impacts will occur from proposed embankment fill for the northern slide slope and/or proposed retaining wall associated with the taxiway. In addition, fill within the pond itself will be necessary to construct the taxiway due to existing topography and requirements from FAA that specify separation between the runway and taxiway centerline. The ENF states that permanent wetland impacts are currently being investigated and will be further quantified in the DEIR based on analysis of field data and advanced project designs for the Preferred Alternative and other alternatives.

The DEIR should provide updated wetlands calculations which reflect the most recent design of the project and identify all temporary and permanent impacts to wetland resource areas. The DEIR should demonstrate how the project will comply with performance standards outlined in the WPA for each resource area. It should provide an updated summary table of all wetland resource area and Buffer Zone impacts. The DEIR should consider impacts associated with surface and subsurface hydrology, wildlife habitat, and describe compliance with BMPs for stormwater management and sedimentation and erosion control. The DEIR should ensure that estimates for impacts to wetland resource areas are conservative and account for all temporary impacts. The DEIR should assess whether the taxiway relocation could be designed to avoid work within the wetland buffer, and if not, provide additional detail about potential mitigation. The DEIR should provide further detail on any proposed tree clearing, invasive species management and potential vernal pools across the project site. **MEPA 67** **MEPA 68** **MEPA 69** **MEPA 70** **MEPA 71**

The project will require a 401 WQC from MassDEP due to the cumulative impacts to BVW and LUW reported in the ENF. MassDEP will review the project for its consistency with Water Quality Regulations pursuant to 314 CMR 9.00. The DEIR is required to provide sufficient information to adequately describe cumulative impacts to "Waters of the Commonwealth" (BVW, Isolated Vegetated Wetland (IVW) and LUW) pursuant to 314 CMR 9.00 and identify efforts to avoid, minimize, and mitigate impacts. Impacts to IVWs that meet federal jurisdictional requirements defined at 33 CFR 328 through 329 are subject to review under 314 CMR 9.00. The DEIR should clarify if the project will impact IVW, and if yes, the DEIR should include a current Jurisdictional Determination from ACOE that verifies whether any or all the impacted IVWs are federal wetlands. The DEIR should describe the volumes associated with proposed dredging and filling within Upper Gate Pond. The Proponent should review the requirements in 314 CMR 9.06 and determine whether a practicable alternative is available that has less adverse impact to the aquatic ecosystem. The alternatives analysis should include a thorough analysis to demonstrate why the geometry of certain elements cannot be modified to decrease wetland impacts. The DEIR should propose appropriate mitigation measures to demonstrate consistency with the WQC regulations. **MEPA 72** **MEPA 73** **MEPA 74** **MEPA 75**

Cultural Resources

According to the ENF, archaeological sites 19-BN-827, 19-BN-828 and 19-BN-829 are within the Airport property. MHC comments note that the first two sites are considered significant ancient

Native American sites. No work is proposed at these archaeological site locations and as such, no impacts to these sites are anticipated. Site 19-BR-74, an Indian Trail, crosses north-south through the Airport property. Work areas in the vicinity of this former Indian Trail have previous heavy impacts related to the construction of the airfield and runways. The DEIR should commit to preparation and implementation of an archaeological site avoidance and protection plan (ASAPP) which describes how the archaeological sites will be protected and preserved from inadvertent construction-related impacts or future land use impacts. The ASAPP should be submitted to MHC for its review and comment. The DEIR should describe measures that will be implemented to avoid impacts to archaeological resources. The DEIR should provide a summary of the outcome of any consultation with MHC. **MEPA 76** **MEPA 77** **MEPA 78**

Water and Wastewater

The DEIR should estimate water use and wastewater generation associated with the terminal building expansion and any other activities that will increase water use. The DEIR should describe the existing and proposed drinking water and wastewater facilities and review any capacity constraints. The DEIR should identify opportunities for water conservation at the airport and associated facilities including water conserving plumbing and reuse of rainwater and greywater for irrigation. It should describe provisions for collecting wastewater containing extinguishing agents and measures for its treatment and/or disposal in accordance with applicable requirements. **MEPA 79** **MEPA 80** **MEPA 81** **MEPA 82**

As previously noted, the Airport is located over a Sole Source Aquifer that is a source of drinking water for Cape Cod. Therefore, proposed improvements will be subject to review under EPA's Sole Source Aquifer Protection Program. The DEIR should provide information responsive to the *EPA Region 1 Sole Source Aquifer Project Review Information* document to allow EPA to determine whether project construction and operation have the potential to contaminate the underlying aquifer. The DEIR should include information and analyses that provide delineation of the aquifer, description of groundwater flow, location of private and public water supply wells, identification of surface water discharges, management of stormwater and liquid and solid waste at the Airport, location of underground storage tanks (UST), and mitigation measures to minimize impacts to water quality. The DEIR should summarize the result of past (and current) groundwater monitoring conducted at or near the Airport. It should explain whether monitoring shows any adverse impacts to public water supplies and private wells associated with airport activities. The DEIR should describe the Proponent's coordination with the local Water Department and Board of Health based on the proximity of private wells. **MEPA 83** **MEPA 84** **MEPA 85** **MEPA 86**

Climate Change

Adaptation and Resiliency

Consistent with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency, the ENF contains an output report from the MA Climate Resilience Design Standards Tool prepared by the Resilient Massachusetts Action Team (RMAT) (the " MA Resilience Design Tool"),[11] together with information on climate resilience strategies to be undertaken by the project. Based on the output report attached to the ENF, the project has a high exposure based on the project's location for the following climate parameters: extreme precipitation (urban and riverine flooding) and extreme heat. Based on the 60-year useful life and the self-assessed criticality of the terminal building, the Tool recommends a

[11] https://resilientma.org/rmat_home/designstandards/

planning horizon of 2070 and a return period associated with a 100-year (1% chance) storm event when designing this asset. This recommendation appears to be based on a "high" criticality rating assigned (based on user inputs) for project assets with a 51 to 100-year useful life.[12] Based on a 20-year useful life and self-assessed criticality of runway and taxiways, the Tool outputs indicate a recommended planning horizon of 2050 and a return period associated with a 10-year (10% chance) storm event for these assets. The ENF does not provide information about anticipated future conditions at the site due to the effects of climate change.

The DEIR should identify the project site's vulnerabilities to climate change and potential features incorporated into the design of the project that will increase the resiliency of the site to likely climate change impacts. I encourage the Proponent to consult the data available from the Town of Barnstable, the Cape Cod Commission, and the resilientMA.org website to develop climate change scenarios for the site and identify potential adaptation measures. The Proponent should consult with the Town regarding the findings of its community resilience workshops, including priority hazards, vulnerabilities, strengths, and actions. The DEIR should provide a review of the Town's studies and resiliency plans on climate vulnerabilities and potential solutions, including regional solutions requiring coordination between the Proponent and abutters and other stakeholders. The DEIR should include a comprehensive discussion of the potential effects of climate change on the project site and describe features incorporated into the project design (including climate-related design specifications and standards) that will increase the resiliency of the site to these changes. The DEIR should include information about the potential adaptation of the project to future conditions. **MEPA 87** **MEPA 88** **MEPA 89** **MEPA 90** **MEPA 91**

The DEIR should describe the precipitation data used for the design of the stormwater management system. The DEIR should discuss how the stormwater system will be sized to address future climate conditions. The MA Resilience Design Tool provides rainfall volumes associated with a 24-hour storm for the project as input by the user. The DEIR should discuss whether the proposed stormwater design will accommodate the recommended 2070 100-year return period (24-hour rainfall volume of 11.0 inches) from the Tool, as well as the 2050 recommendation for runway and taxiway areas corresponding to the 10-year return period as of 2050 (24-hour rainfall volume of 6.1 inches). The DEIR should discuss whether the stormwater management system will attenuate peak flows and meet pollutant loading requirements based on future climate conditions in 2050 and 2070 and should provide a copy of the Stormwater Report for the project. Estimates can be provided in lieu of exact calculations, to the extent stormwater design is not advanced enough by the time of the DEIR. The MA Resilience Design Tool also shows a high risk for the project site for riverine flooding. The DEIR should discuss whether the elevation of the terminal building is anticipated to be resilient to flood elevations at the site associated with future storm scenarios such as the 10-year, 25-year, and 50-year storms as of 2070. The project site is located outside of the 100-year floodplain; however, a small section of forested area near Mary Dunn Pond, within the Airport property, is within the 500-year floodplain. According to the ENF, the project site is not at a high risk for flooding. The DEIR should provide information on any base flood elevations that have been established for adjacent areas, and discuss how the proposed building elevation compares to existing BFEs and whether it is likely to accommodate storm conditions based on future storm scenarios. To the extent the project is unable to accommodate future year storm scenarios, the DEIR should discuss whether the project has engaged in flexible adaptative strategies, and whether current designs allow for future upgrades to be made to adapt to climate change. General guidance on **MEPA 92** **MEPA 93** **MEPA 94** **MEPA 95** **MEPA 96** **MEPA 97**

[12] See https://eea-nescaum-dataservices-assets-prd.s3.amazonaws.com/cms/GUIDELINES/V1.2_SECTION_4.pdf, at p. 23.

flexible adaptive strategies is available on the MA Resilience Design Tool website.[13]

Greenhouse Gas Emissions

This project is subject to review under the May 5, 2010, MEPA GHG Policy, which requires Proponents to quantify carbon dioxide (CO_2) emissions and identify measures to avoid, minimize or mitigate such emissions. The analysis should quantify the direct and indirect CO_2 emissions of the project's energy use (stationary sources) and transportation-related emissions (mobile sources). Direct emissions include on-site stationary sources, which typically emit GHGs by burning fossil fuel for heat, hot water, steam and other processes. Indirect emissions result from the consumption of energy, such as electricity, that is generated off-site by burning of fossil fuels, and from emissions from vehicles used by employees, vendors, customers and others. **MEPA 98**

Stationary Sources

The project includes construction of a 30,600-sf terminal expansion. The DEIR should include a GHG analysis for stationary sources prepared in accordance with the GHG Policy, guidance provided in the comment letter submitted by the Massachusetts Department of Energy Resources (DOER), which is incorporated in this Certificate in its entirety, and this Scope. According to DOER comments, significant updates to the commercial stretch building energy code will go into effect on July 1, 2023 ("July 2023 stretch code").[14] The July 2023 stretch code makes significant changes and improvements to many sections of the code including envelope performance and thermal bridge accounting, ventilation energy recovery, electrification, EV readiness and solar photovoltaic (PV) readiness. For the terminal expansion project, the DEIR should include an analysis that calculates and compares GHG emissions associated with a Base Case and a Preferred Alternative that achieves greater reductions in GHG emissions. Hyannis, which is located within Barnstable, is not a stretch code community. Baseline for this project, therefore, would be Massachusetts base code. However, because the updated code contains numerous provisions which deliver emissions reductions, DOER comments recommend that the project, as a mitigation measure, follow the provisions of the July 2023 stretch code for the proposed expansion. In addition, DOER recommends that the project adopt, as a mitigation measure, efficient electric space and water heating. **MEPA 99** **MEPA 100** **MEPA 101** **MEPA 102**

The GHG analysis should clearly demonstrate consistency with the key objective of MEPA review, which is to document the means by which Damage to the Environment can be avoided, minimized and mitigated to the maximum extent feasible. The DEIR should identify the model used to analyze GHG emissions, clearly state modeling assumptions, explicitly note which GHG reduction measures have been modeled, and identify whether certain building design or operational GHG reduction measures will be mandated by the Proponent to future occupants or merely encouraged for adoption and implementation. The DEIR should include the modeling printouts for each alternative and emission tables that compare base case emissions in tons per year (tpy) with the Preferred Alternative showing the anticipated reduction in tpy and percentage by emissions source. Other tables and graphs, such as the table of mitigation measures recommended by DOER, may also be included to convey the GHG emissions and potential reductions associated with various mitigation measures as necessary. The **MEPA 103** **MEPA 104**

[13] https://eea-nescaum-dataservices-assets-prd.s3.amazonaws.com/cms/GUIDELINES/20210330FlexibleAdaptationPathwaysFormFinal.pdf

[14] The details of this code are available here: https://www.mass.gov/info-details/stretch-energy-code-development-2022#final-code-language-for-stretch-code-update-and-new-specialized-stretch-code-

DEIR should provide data and analysis in the format requested in DOER's letter.

The DEIR should present an evaluation of mitigation measures and recommendations identified in DOER's comment letter. In particular, the feasibility of each of the mitigation measures outlined below should be assessed for the building expansion, and if feasible, GHG emissions reduction potential associated with major mitigation elements should be evaluated to assess the relative benefits of each measure. The DEIR should explain, in reasonable detail, why certain measures that could provide significant GHG reductions were not selected – either because it is not applicable to the project or is deemed technically or financially infeasible. If financially infeasible, the DEIR should describe the cost effectiveness metrics that were used to evaluate feasibility, whether energy savings that would accrue to future tenants were considered, and what "payback period" the Proponent would deem to be reasonable given the financial constraints identified. It should include a review of available financial incentives potentially available for the project, as described in DOER's comment letter. At a minimum, the DEIR should consider the following GHG mitigation measures: **MEPA 105** **MEPA 106** **MEPA 107** **MEPA 108**

- Building design and construction practices that result in low heating and cooling thermal energy demand intensity (TEDI) by maintaining envelope integrity with framed, insulated walls with continuous insulation, minimizing glazed wall systems (e.g., curtain walls), low air infiltration (confirmed with in-building testing), eliminating thermal bridging, ventilation energy recovery and management of solar heat gains
- Minimizing glass curtain wall assemblies and excessive windows
- Efficient electrification of space heating with either full electrification of space heating with air source heat pumps (ASHPs), or, for highly ventilated buildings, a hybrid of air source space heating for primary heating and gas space heating for secondary heating
- Efficient electrification of water heating with ASHPs
- Maximized rooftop solar-readiness (at least 80%) and installed PV
- Maximized electric vehicle (EV) charging equipment (10-15% of spaces) and EV ready spaces (20-25% of spaces)

Mobile Sources / Air Quality

The DEIR should review transportation-related emissions associated with vehicular trips to and from the Airport resulting from the proposed improvements to support future airport growth and identify any Transportation Demand Management (TDM) measures implemented by the Airport to minimize single occupancy vehicle trips to and from the site including promotion of alternative modes of travel. It should review measures to promote the use of low-emissions vehicles. The ENF describes the Proponent's commitment to install EV charging spaces and electric aircraft charging stations (as technology advances). The DEIR should describe the number of EV charging stations that will be installed and commit to providing designated parking spaces for these vehicles. It should provide additional information regarding implementation of electric aircraft charging stations. **MEPA 109** **MEPA 110** **MEPA 111** **MEPA 112**

Land Alteration

The project will alter ±63 acres of land, though the extent of tree clearing is not quantified in the ENF. In addition, tree clearing will occur on easements outside of the Airport property. The DEIR should identify the total areal extent of proposed tree clearing on-site and off-site. In accordance with the GHG Policy, projects that alter over 50 acres of land are required to analyze the carbon loss **MEPA 113**

associated with removal of trees and soil disturbance during the construction period and loss of carbon sequestration. The purpose of this analysis is to develop an estimate, not an exact accounting of GHG emissions associated with land alteration, including removal of trees and release of sequestered carbon in soil. The Proponent should consult with the MEPA Office on the development of a carbon analysis for tree clearing activities. To the extent the degree of tree removal is substantial as determined in consultation with the MEPA Office, the DEIR should develop a methodology to develop the analysis, identify associated impacts on GHG emissions, and identify measures to avoid, minimize and mitigate impacts. The DEIR should provide a quantitative carbon analysis of tree clearing activities that should consider both the one-time direct emissions from tree cutting as well as loss of potential carbon sequestration over a certain time period (e.g., 30 or 40 years). To the extent tree cover is replaced with scrub-shrub habitat, the net loss in carbon sequestration potential may be estimated. The DEIR should account for carbon sequestration from any trees that are removed and not replaced/converted to scrub shrub. **MEPA 114** **MEPA 115**

I expect the DEIR to identify significant mitigation measures commensurate with the project's impacts on the site's capacity to sequester and store carbon. Potential mitigation measures may include funding programs that add or maintain biomass for sequestration purposes (such as tree planting, carbon credits, forest conservation or commitments to implement forest restoration practices) and preserving/protecting forested land through a Conservation Restriction or other means. The DEIR should clearly explain the Proponent's plan for disposition of the trees cleared through the project, including the process for identifying potential markets for reuse of wood. The Proponent should commit to reuse of cleared trees for long-lived wood products to the greatest extent practicable and should indicate how the ultimate disposition of the trees will be tracked and documented. **MEPA 116** **MEPA 117**

Hazardous Waste

According to the ENF, the Airport includes disposal sites regulated by M.G.L. c. 21E, the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000) because releases of oil and hazardous materials (OHM) have occurred at the site; MassDEP assigned 14 Release Tracking Numbers (RTNs) to these releases. The ENF provides a brief summary of these releases, response actions taken, and the current status. These releases are, or have, impacted soil and groundwater conditions at the project site and response actions are ongoing. A Permanent Solution or Temporary Solution has not yet been achieved for two RTNs (4-26347 and 4-28577) and response actions are ongoing; all other RTNs have achieved a Permanent Solution or similar status such that they do not warrant additional response actions.

RTN 4-26347 is associated with onsite and offsite historical releases of PFAS and 1,4-dioxane to soil and groundwater. MassDEP comments note that the source of the 1,4-dioxane is likely the past use of airport deicing liquids and potentially from the release of chlorinated volatile organic compounds (CVOCs) at the Airport and PFAS is believed to have originated from the use and storage of Aqueous Film-Forming Foam (AFFF). Response actions are being performed as an Immediate Response Action (IRA) as well as under MCP Comprehensive Response Actions. A Phase III Identification, Evaluation, and Selection of Comprehensive Remedial Action Alternatives was submitted for the property in June 2022. RTN 4-28577 is associated with presence of polycyclic aromatic hydrocarbons (PAHs) and lead in pond sediments in Upper Gate Pond and Lewis Pond. A Phase I Report and Tier Classification was submitted in November 2021. Other RTNs were associated with releases of aviation gas, motor oil, volatile organic compounds (VOCs), petroleum-related compounds, chlorinated solvents, and other OHM.

The DEIR should describe if proposed improvements will be located within any of the disposal sites previously or currently regulated under the MCP. The DEIR should include a plan that clearly identifies the location of disposal sites and project elements. It should describe if conditions associated with any disposal sites may require remedial measures in the areas where proposed improvements will occur. Residual contamination that remains in the soil in the area of the releases may affect the handling of soil for construction of proposed improvements. The DEIR should describe any potential excavation or disturbance in disposal sites and identify any necessary mitigation measures or handling and disposal requirements. **MEPA 118** **MEPA 119**

The Proponent is working with MassDEP to continue PFAS remediation at the site. The ENF indicates that the Proponent intends to use an "Ecologic Cart" system to prevent the discharge of firefighting foam onto the ground surface during annual, federally required, testing of the foam. The DEIR should comprehensively respond to MassDEP comments regarding preparation of a Release Abatement Measure (RAM) Plan, prior to construction, for Taxiway B Potential Aviation Development Area, Taxiway A Potential Aviation Development Area, and Proposed Building near the Terminal Ramp and North Ramp including. As requested in greater detail in MassDEP comments, the RAM Plan should describe sampling and analysis of soil and asphalt for the presence of PFAS and managing PFAS-contaminated soil and asphalt in Taxiway A and Taxiway B development areas. In addition, some development is proposed within the disposal site boundary for RTN 4-823 associated with the Proposed Building near the Terminal Ramp and North Ramp. The DEIR should confirm if a RAM Plan will be required under 310 CMR 40.0000 based on review of this development by a Licensed Site Professional (LSP). The DEIR should confirm that existing monitoring wells will be maintained for future assessment of groundwater for PFAS, 1,4-dioxane, and potentially other contaminants, otherwise, replacement wells will be installed. **MEPA 120** **MEPA 121** **MEPA 122**

The DEIR should describe if project activities will be located within areas where PFAS or firefighting foam has been used. The DEIR should include an update on the Proponent's ongoing coordination with MassDEP regarding locations where firefighting foam has been used and its potential to be a source of PFAS. The DEIR should describe any areas to be excavated that may contain soil or groundwater contaminated by PFAS and describe necessary mitigation measures. The DEIR should describe if the Proponent plans to test soils in these areas prior to construction, characterize soil with respect to PFAS contamination and, if necessary, maintain a pavement cover over any contaminated areas. The DEIR should provide an estimate of the volume of material to be excavated. Based on the Proponent's review of disposal sites at the Airport and potential areas where PFAS may have been released, the DEIR should identify the presence of soil and/or groundwater contaminants in the areas where excavation is proposed. It should estimate the volume of contaminated material, review testing, treatment and disposal options and identify construction-period mitigation measures to minimize impacts to public health and the environment associated with the excavation and handling of contaminated soil. The Proponent should work with MassDEP to resolve any issues regarding PFAS before conducting any work for the project. **MEPA 123** **MEPA 124** **MEPA 125** **MEPA 126** **MEPA 127** **MEPA 128** **MEPA 129** **MEPA 130**

The DEIR should discuss any generation of hazardous waste and/or waste oil at the Airport and identify potential measures to reduce, recover and reuse hazardous waste. The DEIR should describe implementation of a spills contingency plan that addresses prevention and management of potential releases of OHM from pre- and post-construction activities and will be presented to workers at the site and enforced. The plan should include but not be limited to, refueling of machinery, storage of fuels, and potential on-site activity releases. **MEPA 131** **MEPA 132** **MEPA 133**

Solid Waste

The DEIR should identify the nature and volume of solid waste to be generated by the project. It should describe handling, reuse, recycling and disposal of solid waste. The Proponent should review MassDEP's comment letter for solid waste handling and disposal requirements. The DEIR should describe how the project will comply with all applicable requirements. **MEPA 134** **MEPA 135**

Construction Period

The DEIR should describe how construction activities will be managed in accordance with applicable MassDEP regulations regarding Air Pollution Control (310 CMR 7.01, 7.09-7.10), and Solid Waste Facilities (310 CMR 16.00 and 310 CMR 19.00, including the waste ban provision at 310 CMR 19.017). The DEIR should describe all construction-period impacts and mitigation relative to wetlands, stormwater, noise, air quality, water quality, and traffic. It should describe truck routes and other mitigation measures that may be implemented to minimize impacts to residential areas by trucks travelling to the site during the construction period. Construction equipment should use engines meeting Tier 4 federal emissions standards, or if unavailable, confirm that the project will require its construction contractors to use Ultra Low Sulfur Diesel fuel, and discuss the use of after-engine emissions controls, such as oxidation catalysts or diesel particulate filters. **MEPA 136** **MEPA 137** **MEPA 138**

The DEIR should provide detailed information regarding the project's generation, handling, recycling, and disposal of construction and demolition debris (C&D) and identify measures to reduce solid waste generated by the project. I strongly encourage the Proponent to commit to C&D recycling activities as a sustainable measure for the project. The Proponent is reminded that any contaminated material encountered during construction must be managed in accordance with the MCP and with prior notification to MassDEP. The project will be required to develop a Stormwater Pollution Prevention Plan (SWPPP) in accordance with its NPDES CGP to manage stormwater during the construction period. The DEIR should describe stormwater management measures that will be implemented during construction. It should describe potential construction period dewatering activities and associated permitting (i.e., NPDES) and identify mitigation measures. All construction-period mitigation measures should be listed in the draft Section 61 Findings. I refer the Proponent to the comprehensive review of construction-period regulatory requirements in MassDEP's letter. The DEIR should describe how the project will comply with all applicable requirements. **MEPA 139** **MEPA 140** **MEPA 141** **MEPA 142**

Mitigation and Draft Section 61 Findings

The DEIR should include a separate chapter summarizing proposed mitigation measures including construction-period measures. This chapter should also include a comprehensive list of all commitments made by the Proponent to avoid, minimize and mitigate the environmental and related public health impacts of the project, and should include a separate section outlining mitigation commitments relative to EJ populations. The filing should contain clear commitments to implement these mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation. The list of commitments should be provided in a tabular format organized by subject matter (traffic, water/wastewater, GHG, EJ, etc.) and identify the Agency Action or Permit associated with each category of impact. Draft Section 61 Findings should be separately included for each Agency Action to be taken on the project. The filing should clearly indicate which mitigation measures will be constructed or implemented based upon **MEPA 143**

project phasing, either tying mitigation commitments to overall project square footage/phase or environmental impact thresholds, to ensure that adequate measures are in place to mitigate impacts associated with each development phase.

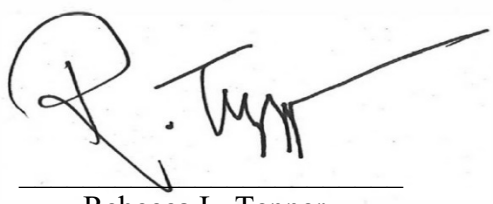
The DEIR should include a commitment to provide a GHG self-certification to the MEPA Office upon expansion of the terminal building signed by an appropriate professional indicating that all of the GHG mitigation measures, or equivalent measures that are designed to collectively achieve identified reductions in stationary source GHG emission and transportation-related measures, have been incorporated into the project. If equivalent measures are adopted, the project is encouraged to commit to achieving the same level of GHG emissions (i.e., "carbon footprint") identified in the Preferred Alternative expressed as a volumetric measure (tpy) in addition to a percentage GHG reduction from Base Case. The commitment to provide this self-certification in the manner outlined above should be incorporated into the draft Section 61 Findings included in the DEIR. **MEPA 144**

Responses to Comments

The DEIR should contain a copy of this Certificate and a copy of each comment letter received. It should include a comprehensive response to comments on the DEIR that specifically address each issue raised in the comment letter; references to a chapter or sections of the DEIR alone are not adequate and should only be used, with reference to specific page numbers, to support a direct response. This directive is not intended, and shall not be construed, to enlarge the scope of the DEIR beyond what has been expressly identified in this certificate. **MEPA 145**

Circulation

In accordance with 301 CMR 11.16, the Proponent should circulate the DEIR to each Person or Agency who commented on the ENF, each Agency from which the project will seek Permits, Land Transfers or Financial Assistance, and to any other Agency or Person identified in the Scope. Pursuant to 301 CMR 11.16(5), the Proponent may circulate copies of the DEIR to commenters in a digital format (e.g., CD-ROM, USB drive) or post to an online website. However, the Proponent should make available a reasonable number of hard copies to accommodate those without convenient access to a computer to be distributed upon request on a first come, first served basis. The Proponent should send correspondence accompanying the digital copy or identifying the web address of the online version of the DEIR indicating that hard copies are available upon request, noting relevant comment deadlines, and appropriate addresses for submission of comments. A copy of the DEIR should be made available for review in the Barnstable and Yarmouth Public Libraries. **MEPA 146**



January 23, 2023
Date

Rebecca L. Tepper

Comments received:

01/06/2023 Paul Phalan
01/07/2023 Susan Sulkoski
01/10/2023 Thomas Sullivan
01/11/2023 Christine Greeley
01/12/2023 Betty Ludtke
01/12/2023 Elissa Buja
01/12/2023 Linda Bolliger
01/12/2023 Anonymous (email address provided on comment letter)
01/12/2023 Richard Mikolajczak
01/12/2023 Susan Ascher
01/12/2023 Susan Brita
01/12/2023 Robert Writenour, Town of Yarmouth
01/12/2023 Lucinda Van Doren-Abrecht
01/12/2023 Donald Englert
01/12/2023 Robert Berry and Kathleen Benson
01/12/2023 Massachusetts Department of Environmental Protection (MassDEP) – Southeast Regional Office (SERO)
01/12/2023 Massachusetts Historical Commission (MHC)
01/12/2023 Cape Cod Commission
01/13/2023 Karen Ingemie
01/14/2023 George Doble
01/23/2023 Massachusetts Department of Energy Resources (DOER)

RLT/PPP/ppp

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

January 12, 2023

Secretary Bethany Card
Executive Office of Energy
and Environmental Affairs (EEA)
100 Cambridge Street, Suite 900
Boston MA 02114

ATTN: Purvi Patel, MEPA Unit

RE: Cape Cod Gateway Airport Master Plan Projects, Barnstable (Hyannis), MA; **EEA# 16640**
MHC# RC.9847

Dear Secretary Card:

Staff of the Massachusetts Historical Commission (MHC) have reviewed the Environmental Notification Form (ENF) for the above referenced project. MHC staff have the following comments.

The proposed project consists of an update to the 2020 Master Plan for the Barnstable Airport (now called Cape Cod Gateway Airport), which must be approved by the FAA. Review of the MHC's Inventory of Historic and Archaeological Assets of the Commonwealth indicates that there are two significant ancient Native American sites (19-BN-827 and 19-BN-828) that are located on the airport grounds. It appears that these sites are not located within the direct project impact areas and could be protected and preserved from inadvertent construction-related damage or future land use damage through the development of an archaeological site avoidance and protection plan (ASAPP). MHC requests that an ASAPP be prepared and implemented. The draft plan should be submitted to the MHC for review and comment. The MHC looks forward to consultation with the FAA in compliance with Section 106 of the National Historic Preservation Act (36 CFR 800). **MHC 01** **MHC 02**

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800), Mass. General Laws, Chapter 9 ss, 26-27C (950 CMR 71), and MEPA. If you have any questions concerning this review, please feel free to contact me.

Sincerely,

Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

xc: Richard Doucette, FAA
David Weeden, THPO, Mashpee Wampanoag Tribe
Katie Servis, Cape Cod Gateway Airport
Alyssa Jacobs, Epsilon

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Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Gary Moran
Acting Commissioner

January 12, 2023

Rebecca L. Tepper
Secretary of Environment and Energy
Executive Office of Energy and
Environmental Affairs
Boston, MA 02114
ATTN: MEPA Office
100 Cambridge Street, Suite 900

RE: ENF Review. EOEEA 16640
BARNSTABLE Cape Cod Gateway Airport
at 480 Barnstable Rd

Dear Secretary Tepper,

The Southeast Regional Office of the Department of Environmental Protection (MassDEP) has reviewed the Expanded Environmental Notification Form (EENF) for the Cape Cod Gateway Airport at 480 Barnstable Rd, Barnstable, Massachusetts (EOEEA #16640). The Project Proponent provides the following information for the Project:

The Master Plan recommends improvements needed to meet the goals of the Airport and its users. These important safety and infrastructure projects will serve to bring the Airport's geometry into compliance with Federal Aviation Administration ("FAA") standards (FAA AC 150/5300-13A, Airport Design) and meet current forecasted demand for airport use and hangar space. The ENF is being filed to commence MEPA review for the Project.

Projects to be implemented over the next 20-year period include: Runway 15-33 extension, runway safety area enhancements, taxiway modifications including constructing a partial parallel taxiway to Runway 15- 33, removing Taxiway D between Taxiway A and the new parallel taxiway, constructing a run-up area along the north side of the proposed partial parallel taxiway, removing Taxiway E, terminal Improvements, general aviation (GA) improvements, and non-aeronautical land use development areas

Bureau of Water Resources (BWR)Comments

Wetlands. The MassDEP SERO has reviewed the Environmental Notification Form (ENF) for the proposed Project. Portions of the work involve permanent impacts to Upper Gate Pond wetland resource areas including Bank (310 CMR 10.54), Bordering Vegetated Wetlands (BVW) (310 CMR 10.55), and Land under Water Bodies and Waterways (LUWW) (310 CMR 10.56). Specifically, the construction activities associated with Taxiway D realignment will result in estimated permanent alterations of 396 linear feet of Bank; 3,427 square feet of BVW; and 23,654 square feet of LUWW. The EENF states that permanent wetland impacts are currently being investigated and will be further quantified in the Environmental Impact Report phase based on

analysis of field data and advanced project designs for the Preferred Alternative and other alternatives.

DEP-SERO Wetlands program notes that the Proponent intends to submit a Notice of Intent (NOI) to the Town of Barnstable and MassDEP for the Project. The Notice of Intent shall include the information necessary to determine the project's compliance with the performance standards to each of the resource areas affected. The Department will address the Project's compliance with the applicable performance standards during NOI review. The Project will require a Superseding Order of Conditions from the Department or a Final Order of Conditions from the local Conservation Commission before any activity commences. **DEP 01**

The Project proposes dredging and fill within Upper Gate Pond (quantities to be determined). The EENF indicates the Proponent intends to submit a 401 Water Quality Certification (314 CMR 9.00) as one of the required permits. An alternatives analysis that demonstrates measures taken to avoid, minimize and mitigate for the dredging and fill must be submitted with the 401 Water Quality Certificate application. **DEP 02**

The Project will result in approximately 21 acres of new impervious area, and as such, the Project is subject to the Stormwater Regulations at [310 CMR 10.05(6)(k)-(q)] and [314 CMR 9.06 (6)(a)-(f)]. According to the ENF, stormwater management for the proposed individual projects will comply these regulations. The Stormwater Report will be reviewed by the Department as part of the NOI filing. **DEP 03**

Waterways. Based on the information contained in the ENF, there does not appear to be any work proposed within Waterways jurisdiction.

Stormwater Management.

National Pollutants Discharge Elimination System (NPDES) permit

The Project Proponent acknowledges its permitting coverage under National Pollutant Discharge Elimination System (NPDES) Construction Activities Permit under the Clean Water Act. The Project Proponent is advised it is illegal to discharge any pollutants to navigable waters of the United States from a point source unless the discharge is authorized by a National Pollutants Discharge Elimination System (NPDES) permit. **DEP 04**

The Proponent can access information regarding the NPDES Stormwater requirements and an application for the Construction General Permit by completing and submitting a Notice of Intent (NOI) to EPA via the Stormwater Discharges from Construction Activities | National Pollutant Discharge Elimination System (NPDES) | US EPA.

The Proponent is advised to consult with Sania Kamran (Kamran.Sania@epa.gov, 617- 918-1522) for questions regarding EPA's NPDES Construction General Permit requirements.

Industrial Stormwater Permit

The stormwater section of the ENF does not know acknowledge states that the Project Proponent may require an EPA NPDES Multi Sector General Permit (Industrial Stormwater) Program (https://www.epa.gov/sites/production/files/2016-04/documents/sector_s_airtransmaint.pdf). Based on the Department's investigation, the Project Proponent is operating without the required permit that falls under the requirements of Sector S Vehicle Maintenance Areas, Equipment Cleaning Areas, or Deicing Areas located at Air Transportation Facilities. **DEP 05**

Under the 2015 Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP), EPA has updated the requirements for Sector S to incorporate the Airport deicing effluent

limitation guidelines and new source performance standards. Airlines and airports conduct deicing operations on aircraft and airfield pavement to ensure the safety of passenger and cargo flights. In the absence of controls, deicing chemicals are widely dispersed causing pollutants to enter nearby rivers, lakes, streams, and bays. On May 16, 2012, EPA published the Airport Deicing ELG in the Federal Register to control the discharge of pollutants from airport deicing operations to surface waters. See 40 CFR Parts 9 and 449. The requirements largely apply to wastewater associated with the deicing of airfield pavement at primary airports. The rule also established NSPSs for wastewater discharges associated with aircraft deicing for a subset of new airports. These guidelines are implemented in discharge permits issued by states and EPA Regional Offices under the NPDES program. Therefore, the 2015 MSGP is incorporating the requirements from the Airport ELG that are appropriate to the kinds of discharges the permit authorizes. Additional information regarding this EPA permit may be found at: https://www3.epa.gov/npdes/pubs/sector_s_airtransmaint.pdf .

Underground Injection Control

The Proponent is advised in the event that the conveyances of stormwater through underground infiltration structures are planned that they are subject to the jurisdiction of the MassDEP *Underground Injection Control (UIC)* program. These structures must be registered with MassDEP UIC program through the submittal of a BRP WS-06 UIC Registration application through MassDEP's electronic filing system, eDEP. The statewide UIC program contact is Joe Cerutti, who can be reached at (617) 292-5859 or at joseph.cerutti@state.ma.us . All information regarding on-line (eDEP) UIC registration applications may be obtained at the following web page under the category "Applications & Forms": https://www.mass.gov/underground-injection-control-uic. **DEP 06**

Waste Water Management. Cape Cod Gateway Airport is required to demonstrate the ability to apply extinguishing agent as part of its FAA Part 139 safety certification. The capital improvements to the airport should include provisions to collect the wastewater containing the extinguishing agents generated during these demonstrations and/or training events so that proper treatment and/or disposal can occur in conformance with Massachusetts requirements. **DEP 07**

Bureau of Waste Site Cleanup (BWSC) Comment

1. The Cape Cod Gateway Airport is listed as a MassDEP disposal site due to the release of 1,4-dioxane and PFAS in the soil and groundwater. The source of the 1,4-dioxane is likely the past usage of airport deicing liquids and potentially from the release of chlorinated volatile organic compounds (CVOCs) at the Airport. The PFAS is believed to have originated from the usage and storage of Aqueous Film-Forming Foam (AFFF). Release Tracking Number (RTN) 4-0026347 has been assigned to the PFAS and 1,4-dioxane releases at the Airport.

2. The Cape Cod Gateway Airport is also listed as a MassDEP disposal site due to the release of CVOCs to the subsurface. RTN 4-00000823 was assigned to the release of CVOCs and was closed out with a Permanent Solution without Conditions on September 20, 2020.

3. MassDEP Bureau of Waste Site Cleanup has reviewed the Environmental Notification Form for the Cape Cod Gateway Airport runway upgrades and has the following comments:

   a. Prior to the anticipated construction activities, a MassDEP Release Abatement Measure (RAM) Plan should be submitted for the following areas: **DEP 08**

      i. Taxiway B "Potential Aviation Development Area"
         1. Based on a review of the Phase II for the Cape Cod Gateway Airport, some areas were not previously sampled for PFAS including the area under Taxiway B. The RAM should include a plan to sample and analyze soil beneath Taxiway B during airport upgrades for the presence of PFAS. The RAM shall also describe how the PFAS-

containing soil, if detected, will be properly managed and discuss whether this finding affects the remediation options under RTN 4-0026347.

2. The "Potential Aviation Development Area" along Taxiway B coincides with the asphalt caps located at the ARFF area and the Deployment area. These caps were installed to mitigate the leaching of PFAS from the soil to the groundwater. Any asphalt removed from the taxiway, including the capped area, should be sampled/analyzed for PFAS and managed appropriately if PFAS is found to be present. Furthermore, the RAM Plan should also include provisions to manage any PFAS-contaminated soils encountered under the cap.

3. The RAM Plan shall describe how the caps' integrity will be maintained during and after construction. The RAM Plan shall include a plan to replace the caps if the integrity of the caps cannot be maintained.

4. The RAM should also include a plan to sample the asphalt from both the taxiway and the asphalt caps for PFAS and, if detected, the RAM Plan shall describe how the asphalt will be managed.

ii. Taxiway A "Potential Aviation Development Area"
   1. Available records in MassDEP's files indicate that the 1991 drill location, located near the north end of Taxiway A, had documented use of AFFF. The area abutting the 1991 drill location is slated as "Potential Aviation Development Area". When development begins here, the RAM shall include a plan to sample disturbed soil in areas not previously sampled/analyzed. Further, the RAM Plan shall include the requirements for proper soil management if PFAS is detected. **DEP 09**

iii. "Proposed Building" near the Terminal Ramp and North Ramp
   1. Some development is proposed within the disposal site boundary for RTN 4-0000823. The LSP should review the anticipated development to determine if a RAM Plan is required under 310 CMR 40.0000. **DEP 10**

b. Existing monitoring wells should be maintained for future assessment of groundwater for PFAS, 1,4-dioxane, and potentially other contaminants. If the wells cannot be maintained, then replacement wells should be installed. **DEP 11**

Spills Prevention Control. A spills contingency plan addressing prevention and management of potential releases of oil and/or hazardous materials from pre- and post-construction activities should be presented to workers at the site and enforced. The plan should include but not be limited to, refueling of machinery, storage of fuels, and potential on-site activity releases. **DEP 12**

Bureau of Air and Waste (BAW) Comments:

Air Quality. Construction and operation activities shall not cause or contribute to a condition of air pollution due to dust, odor or noise. To determine the appropriate requirements please refer to: **DEP 13**

310 CMR 7.09 Dust, Odor, Construction, and Demolition
310 CMR 7.10 Noise

Cape Cod Gateway Airport *Construction-Related Measures*

The Project Proponent reports: "The construction contract will require contractors to use several measures to reduce potential emissions and minimize impacts from construction vehicles including:

- Encouraging contractors to use construction equipment EPA Tier 4 equipment or equipment retrofitted with diesel emission control devices to the greatest extent practicable.
- Using Ultra-Low Sulphur Diesel for all trucks and construction machinery.
- Maintaining an "idle free" work area.
- Minimizing exposed storage of debris on-site through measures such as wetting soils prior to disturbing and covering stockpiles

MassDEP requests that all non-road diesel equipment rated 50 horsepower or greater meet EPA's Tier 4 emission limits, which are the most stringent emission standards currently available for off-road engines. If a piece of equipment is not available in the Tier 4 configuration, then the Proponent should use construction equipment that has been retrofitted with appropriate emissions reduction equipment. Emission reduction equipment includes EPA-verified, CARB-verified, or MassDEP-approved diesel oxidation catalysts (DOCs) or Diesel Particulate Filters (DPFs). The Proponent should maintain a list of the engines, their emission tiers, and, if applicable, the best available control technology installed on each piece of equipment on file for Departmental review. **DEP 14**

Massachusetts Idling Regulation
The EENF reports that the Project Proponent proposes to maintain an idle free work area.

MassDEP reminds the Proponent that unnecessary idling (i.e., in excess of five minutes), with limited exception, is not permitted during the construction and operations phase of the Project (Section 7.11 of 310 CMR 7.00). Regarding construction period activity, typical methods of reducing idling include driver training, periodic inspections by site supervisors, and posting signage. In addition, to ensure compliance with this regulation once the Project is occupied, MassDEP requests that the Proponent install permanent signs limiting idling to five minutes or less on-site. **DEP 15**

Hazardous Waste Management. If any occupant of the Project generates hazardous waste and/or waste oil, that entity must register with the MassDEP or EPA to obtain a permanent identification number, as applicable, in accordance with 310 CMR 30.000 for legally generating and managing regulated waste. The Proponent is advised to consult at this MassDEP website https://www.mass.gov/guides/hazardous-waste-generation-generators to determine if the Proponent qualifies as a generator of hazardous waste and/or waste oil. **DEP 16**

Source reduction, recovery, and reuse are recommended to significantly decrease or eliminate airport waste as well as an airport's operation costs for treatment and/or disposal. To determine the potential saving of these operational costs, a study should be made of all the airport's industrial and hazardous waste management. When completed this study would monitor inventory, pollutant streams, and ultimately how to maximize the potential to reduce pollutant loading/toxicity and how to reuse/recycle to the maximum extent feasible while complying with all requirements on a regular cycle for evaluation and permit re authorization. **DEP 17**

Solid Waste Management. The Project Proponent reports that Existing trees are being removed as part of the proposed project. In addition, "The contractor will apply relevant and practicable procedures to allow for the reuse and recycling of construction materials. A Construction Waste Management Plan will be developed to ensure that a minimal amount of waste debris is disposed of in landfills. For materials that cannot be recycled, solid waste will be transported in covered trucks to an approved solid waste facility per the DEP Regulation for Solid Waste Facilities, 310 CMR 16.00."

MassDEP requests that the Proponent state specifically how the Proponent plans to address the Department's solid waste regulations concerning the disposal of materials resulting from proposed roadway work resulting from the proposed CWMP roadway-related construction. **DEP 18**

1. *Compliance with Waste Ban Regulations*: Waste materials discovered during construction (e.g., metal, asphalt, brick, and concrete) shall be disposed, recycled, and/or otherwise handled in accordance with the Solid Waste Regulations including 310 CMR 19.017: Waste Bans. Waste Ban regulations prohibit the disposal, transfer for disposal, or contracting for disposal of certain hazardous, recyclable, or compostable items at solid waste facilities in Massachusetts, including, but not limited to, metal, wood, asphalt pavement, brick, concrete, and clean gypsum wallboard. The goals of the waste bans are to: promote reuse, waste reduction, or recycling; reduce the adverse impacts of solid waste management on the environment; conserve capacity at existing solid waste disposal facilities; minimize the need for construction of new solid waste disposal facilities; and support the recycling industry by ensuring that large volumes of material are available on a consistent basis. Further guidance can be found at: https://www.mass.gov/guides/massdep-waste-disposal-bans. **DEP 19**

   MassDEP recommends the Proponent consider source separation or separating different recyclable materials at the job site. Source separation may lead to higher recycling rates and lower recycling costs. Further guidance can be found at: https://recyclingworksma.com/construction-demolition-materials-guidance/ **DEP 20**

   For more information on how to prevent banned materials from entering the waste stream the Proponent should contact the RecyclingWorks in Massachusetts program at (888) 254-5525 or via email at info@recyclingworksma.com. RecyclingWorks in Massachusetts also provides a website that includes a searchable database of recycling service providers, available at http://www.recyclingworksma.com.

2. *Asphalt, brick, and concrete (ABC) rubble,* such as the rubble generated during construction must be handled in accordance with the Solid Waste regulations. These regulations allow, and MassDEP encourages, the recycling/reuse of ABC rubble. The Proponent should refer to MassDEP's Information Sheet, entitled " Using or Processing Asphalt Pavement, Brick and Concrete Rubble, Updated February 27, 2017 ", that answers commonly asked questions about ABC rubble and identifies the provisions of the solid waste regulations that pertain to recycling/reusing ABC rubble. This policy can be found on-line at the MassDEP website: https://www.mass.gov/files/documents/2018/03/19/abc-rubble.pdf. **DEP 21**

3. Tree *removal/land clearing:* As defined in 310 CMR 16.02, clean wood means "discarded material consisting of trees, stumps and brush, including but limited to sawdust, chips, shavings, bark, and new or used lumber" …etc. Clean wood does not include wood from commingled construction and demolition waste, engineered wood products, and wood containing or likely to contain asbestos, chemical preservatives, or paints, stains or other coatings, or adhesives. The Proponent should be aware that wood is not allowed to be buried or disposed of at the Site pursuant to 310 CMR 16.00 & 310 CMR 19.000 unless otherwise approved by MassDEP. Clean wood may be handled in accordance with 310 CMR 16.03(2)(c)7 which allows for the on-site processing (i.e., chipping) of wood for use at the Site (i.e., use as landscaping material) and/or the wood to be transported to a permitted facility (i.e., wood waste reclamation facility) or other facility that is permitted to accept and process wood **DEP 22**

If the Project Proponent has any questions regarding the Solid Waste Management Program comments above, please contact Elza Bystrom at Elza.Bystrom@mass.gov or Mark Dakers at Mark.Dakers@mass.gov.

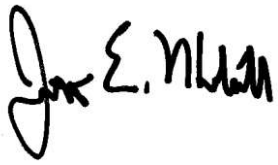
Proposed s.61 Findings

The "Certificate of the Secretary of Energy and Environmental Affairs on the Environmental Notification Form" may indicate that this Project requires further MEPA review and the preparation of an Environmental Impact Report. Pursuant to MEPA Regulations 301 CMR 11.12(5)(d), the Proponent will prepare Proposed Section 61 Findings to be included in the EIR in a separate chapter updating and summarizing proposed mitigation measures. In accordance with 301 CMR 11.07(6)(k), this chapter should also include separate updated draft Section 61 Findings for each State agency that will issue permits for the Project. The draft Section 61 Findings should contain clear commitments to implement mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation.

Other Comments/Guidance

The MassDEP Southeast Regional Office appreciates the opportunity to comment on this EENF. If you have any questions regarding these comments, please contact George Zoto at George.Zoto@mass.gov or Jonathan Hobill at Jonathan.Hobill@mass.gov.

Very truly yours,



Jonathan E. Hobill,
Regional Engineer,
Bureau of Water Resources

JH/GZ

Cc: DEP/SERO

ATTN: Millie Garcia-Serrano, Regional Director
Gerard Martin, Deputy Regional Director, BWR
John Handrahan, Acting Deputy Regional Director, BWSC
Seth Pickering, Deputy Regional Director, BAW
Jennifer Viveiros, Deputy Regional Director, ADMIN
Daniel Gilmore, Chief, Wetlands and Waterways, BWR
Maissoun Reda, Wetlands, BWR
Brendan Mullaney, Waterways, BWR
Daniel DiSalvio, Chief, Compliance and Enforcement, BAW
Joseph Cerutti, Underground Injection Control, BWR/Boston
Mark Dakers, Solid Waste, BAW
Elza Bystrom, Solid Waste Management, BAW
Angela Gallagher, Audits, BWSC
Allen Hemberger, Site Management, BWSC

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF
ENERGY AND ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENERGY RESOURCES
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Telephone: 617-626-7300
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Maura Healey
Governor

Kim Driscoll
Lt. Governor

Rebecca Tepper
Secretary

Patrick Woodcock
Commissioner

23 January 2023

Rebecca Tepper, Secretary
Executive Office of Energy & Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02114
Attn: MEPA Unit

RE: Cape Cod Gateway Airport, Hyannis, EEA #16640

Cc: Maggie McCarey, Director of Energy Efficiency, Department of Energy Resource
Patrick Woodcock, Commissioner, Department of Energy Resources

Dear Secretary Tepper:

We've reviewed the Environmental Notification Form (ENF) for the proposed project. The project includes construction of a 30,000-sf terminal expansion. For this project we expect key mitigation measures to include:

- Building design and construction practices that result in low heating and cooling thermal energy demand intensity (heating and cooling "TEDI") by:
    - Maintaining envelope integrity with framed, insulated walls with continuous insulation;
    - Thermal-bridge free envelope;
    - Minimizing glazed wall systems (e.g. curtain walls);
    - Low air-infiltration, confirmed with in-building air-infiltration testing;
    - Ventilation energy recovery;

  - Management of solar heat gains;

- Efficient electrification of space heating with either full electrification of space heating with air source heat pumps, or, for highly ventilated buildings, a hybrid of air source space heating for primary heating and gas space heating for secondary heating.

- Efficient electrification of water heating with air source heat pump water heating

- Extensive rooftop solar-readiness;

- Electric vehicle charging equipment and electric vehicle ready parking spaces.

Codes, Baseline, and Mitigation

Hyannis, which is located with Barnstable, is not a stretch code community. Baseline for this project, therefore, would be Massachusetts base code.

Note, however, that an updated version of the Massachusetts commercial stretch code goes into effect on 1 July (herein called the "July 2023 commercial stretch code".) Because this updated code contains numerous provisions which deliver emissions reduction, we recommend that the project, as a mitigation measure, follow the provisions July 2023 commercial stretch code for the proposed expansion. (In addition, we recommend that the project adopt, as a mitigation measure, efficient electric space and water heating, more below.)

DOER 01

The details of this code are available here:

https://www.mass.gov/info-details/stretch-energy-code-development-2022#final-code-language-for-stretch-code-update-and-new-specialized-stretch-code-

The July 2023 commercial stretch code makes significant changes and improvements which help deliver emissions reduction, including:

- envelope performance
- thermal bridge accounting
- ventilation energy recovery
- EV readiness
- PV readiness

The following sections describe key emissions reduction strategies.

Envelope, Heat Recovery, and Solar Gains

The combination of quality envelope, heat recovery, and management of solar gains can result in significant reduction in heating (and cooling) thermal energy demand intensity (TEDI, units of

kBtu/sf-yr)[1]. In addition to reduced utility costs and emissions, the value of a targeted focus on heating and cooling TEDI results in:

- Simplified space heating electrification;
- Reduction, and possible elimination, of perimeter heating systems;
- Improved resiliency;
- Reduced peak demands;
- Improved occupant comfort;
- Reduced maintenance.

Specific TEDI reduction strategies are:

- High-performance window and walls;
- Thermally-broken windows and other components to eliminate thermal bridges;
- Low air-infiltration;
- Ventilation energy recovery;
- Solar gain management via external shading and/or low solar heat gain coefficient (SHGC)

Buildings with glazed wall systems (curtain wall and storefront windows) require high performing windows and high performing opaque spandrels to achieve heating TEDI reductions. High performing windows and high performing opaque spandrels should be carefully evaluated if glazed wall systems are being considered.

Note that the July 2023 commercial stretch code contains significant updates to envelope performance, ventilation energy recovery, air infiltration, and other key TEDI-reduction strategies. If the project uses the July 2023 commercial stretch code for its proposed project, the project would be incorporating these significant updates, as well. Key updates include:

Vertical Envelope Performance

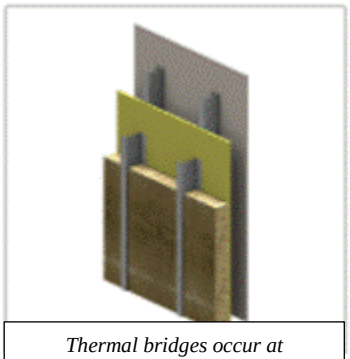
The July 2023 commercial stretch code enhances mandatory vertical envelope performance and no longer allows improvements to roof (or other areas) to compensate for reduced above-grade vertical performance. When using glazed wall systems (e.g. curtain walls, storefront windows), fenestration within the glazed wall system must have performance of U-0.25 or better.

Also note that, excepting highly ventilated buildings, buildings having more than 50% glazed wall system must have full space heating electrification per Section C401.4.1. (Highly ventilated building must have partial space heating electrification per Section C401.4.2, regardless of amount of glazed wall system.)

[1] Although they have the same units, heating and cooling TEDI is not the same as heating and cooling EUI. TEDI represents energy requirement, or demand, not energy consumption. For guidance on how to extract TEDI information from building models see "Energy Modeling Guidelines", City of Vancouver, Planning, Urban Design and Sustainability Department, Land Use Development and Policy Guidelines, Version 2.0, amended 18 July 2018 and "Designing to TEDI, TEUI, and GHGI Performance Metrics", International Building Performance Simulation Association (IBPSA), by Chan *et al*

Thermal bridges

Thermal bridges are elements that interrupt areas of uniform thermal resistance in the building envelope. Thermal bridges occur at commonly used girt systems used to attach wall coverings, curtain wall connections, door to wall intersections, parapets, penetrations, window to wall intersections, wall to wall intersections, and in many other locations.



Thermal bridges occur at commonly used "z-girts" used to connect wall covers. Thermal bridges also occur at balconies, parapets, window to wall intersections, and many other locations

Thermal breaks should be thoroughly incorporated into the design to ensure that the intended wall, window, and roof performance is being delivered. The project can use the thermal bridge accounting method described in the Building Envelope Thermal Bridging Guide[2]. This design guide now has a web-based database[3].

DOER 02

All window and wall thermal values should reflect the thermal values after accounting for thermal bridges. Unfortunately, many projects do not typically account for thermal bridges other than framing wall studs and, as a result, delivered envelope performance is likely lower, often significantly lower, than intended by design.

Note that the July 2023 commercial stretch code mandates thermal bridge accounting. All U-value performance values must explicitly reflect performance after accounting for thermal bridges per Section C402.7 of the July commercial stretch code.

Air Infiltration

Low air infiltration, confirmed with whole-building testing in the field, is essential to ensure high levels of energy efficiency, low heating and cooling TEDI, and greenhouse gas mitigation. Even small amounts of air leakage can reverse all other envelope progress.

Note the July 2023 commercial stretch code makes significant updates to air infiltration, including:

- Maximum allowable air infiltration is now lowered to 0.3 cfm/sf at 75 Pa
- Air infiltration testing in the field, to confirm allowable limits are being met, will be mandatory

We recommend adopting C406.8 of the July 2023 commercial stretch code as a mitigation measure for all buildings. This section requires air infiltration of 0.2 cfm/sf or less at 75 Pa, confirmed with testing in the field.

DOER 03

[2] Building Envelope Thermal Bridging Guide, Version 1.2, 2018, BC Hydro available here https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/power-smart/business/programs/building-envelope-thermal-bridging-guide-version-1.2.pdf

[3] https://thermalenvelope.ca/

Energy Recovery – Ventilation

Ventilation energy recovery includes systems that recover energy in a building's ventilation system. Note that the July 2023 commercial stretch code increases the minimum ventilation energy recovery effectiveness to 75% for dwelling spaces, 70% for Class 1 and Class 2 exhaust, and 50% for Class 3 and 4 exhaust. A recommended above-code mitigation measure is to improve Class 3 and 4 exhaust effectiveness to at least 70%. **DOER 04**

Solar Gain Management

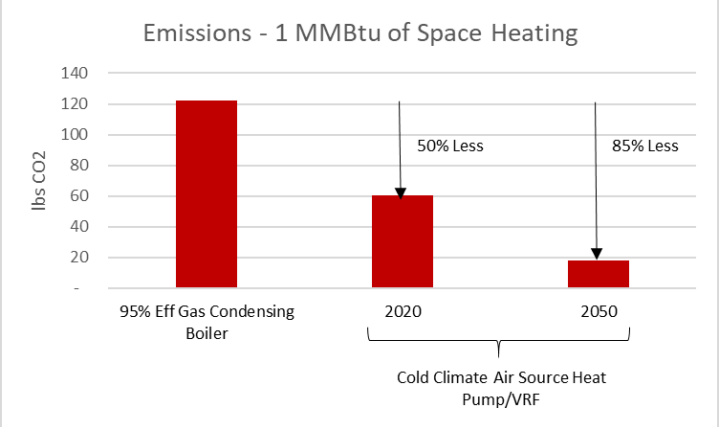
Solar gains can be managed with a combination of external shading, set-back windows, reduced window aperture (e.g. "window to wall ratio"), and/or improved solar heat gain coefficient (SHGC) vision glass. We recommend using cooling TEDI to evaluate these strategies. Note that cooling TEDI limits are now mandatory for some building types in the July 2023 commercial stretch code. **DOER 05**

Efficient Electrification – Space Heating

Efficient electrification of space heating entails the swapping of fossil fuels (natural gas, oil, and propane), or electric resistance systems, with cold-climate rated air source heat pumps or ground source heat pumps.

Electrification of space heating is a key mitigation strategy with significant short- and long-term implications on GHG emissions. Massachusetts grid emissions rates continue to decline with the implementation of clean energy policies that increase renewable electricity sources. The implication is that efficient electric space heating with cold climate air source heat pump (or ground source heat pump) has lower emissions than other fossil-fuel based heating options, including best-in-class (95% efficient) condensing natural gas equipment.

Currently, efficient electric heating has approximately **50% lower emissions** in Massachusetts than condensing natural gas heating. By 2050, and possibly sooner, efficient electric heating is expected to have approximately **85% lower emissions** in Massachusetts than condensing natural gas heating. See illustration below.



The proposed terminal expansion can be readily fully electrified for space heating using air source heat pumps systems, which is recommended. **DOER 06**

Efficient Electrification – Service Water Heating

Similar to above, due to Massachusetts low electric grid emissions, swapping from even "best in class" condensing gas equipment to electric air source heat pump service water heating results in significant emissions reduction.

Service water can be readily fully electrified with air source heat pump water heating for the proposed terminal, which is recommended. **DOER 07**

Solar PV

Rooftop PV can provide significant GHG benefits as well as significant financial benefits. Even if PV is not installed during building construction, it is important to plan the project to ensure that roof space is set aside for PV and that roof space doesn't become unnecessarily encroached with HVAC appurtenances, diminishing the opportunities for future PV. **DOER 08**

Electric Vehicle (EV) Parking Spaces

EV charging stations are critical for the continual transition towards electric mobility. Both EV charging stations and spaces that are EV ready are recommended. **DOER 09**

As a mitigation measure, we recommend providing EV equipment to at least 10-15% of the spaces and having at least 20-25% of spaces be EV ready.

Incentives

Buildings which incorporate the above strategies can qualify for significant incentives:

- MassSave® performance-based incentives[4] offer incentives for every kWh or therm saved compared to a program-provided energy model. The above energy efficiency strategies offer opportunities for large kWh and therm savings.

- Alternative Energy Credits (AECs)[5] offer incentives to electrify building space heating using heat pumps and/or VRF. This program also includes multipliers which increase value if the building meets Passivehouse standards or buildings built to HERs 50 or less. These credits may be distributed on a quarterly basis over time; or, may be distributed in a lump sum to the developer if certain conditions are met.

- Massachusetts SMART program[6] provides significant incentives for solar development on top of federal and state tax incentives. SMART includes pathways which allow solar

[4] https://www.masssave.com/en/saving/business-rebates/new-buildings-and-major-renovations/
[5] https://www.mass.gov/guides/aps-renewable-thermal-statement-of-qualification-application
[6] https://www.mass.gov/solar-massachusetts-renewable-target-smart

production to be sold without off-takers. This may be of potential interest to building developers as this allows them to develop rooftop solar without necessarily engaging with building tenants. For this reason, setting aside rooftop solar PV areas helps ensure that building owners' ability to monetize the roof is not impacted.

Recommendations for the Next Submission

Recommendations are as follows:

1. A combination of high-performing, thermally broken envelope, heat recovery, and solar gain management should be used throughout with an aim toward reducing heating and cooling TEDI. Strategies to achieve this include: **DOER 10**

    a. Above code-threshold envelope (vertical walls, windows, roofs and exposed lower-level floors). Priority should be given to increasing continuous insulation and framed insulated wall sections.

    b. Account for thermal bridges in assemblies. Use thermal bridge free assemblies and components to thermally break:

        i. Hangers, girts, ties, and brick shelfs
        ii. Intersections between balconies and vertical walls
        iii. Intersections between the floor and vertical walls
        iv. Transitions from wall to window
        v. Parapets
        vi. Vertical wall to vertical wall transitions (where the wall "turns")

        Consult https://thermalenvelope.ca/catalogue/ for pre-solved clear wall thermal bridge and linear thermal bridge values.

    c. Minimize glazed wall systems as much as possible. Avoid these systems where possible, as these are the lowest performing wall systems.

    d. If glazed wall systems are used, evaluate systems having opaque the "spandrel" portion between R-4 through R-10. Opaque spandrel systems with performance higher than R-10 are not recommended as there are significant difficulties to achieving performance higher than this in practice. Consult https://thermalenvelope.ca/catalogue/ for pre-solved opaque curtain wall performance values. Note that the 2023 commercial stretch code now mandates that the vision portion of the glazed wall system has at least R-4 vision glass.

    e. For all wall sections adjacent to office and similar spaces, use the thermal comfort tool to help evaluate reduction/elimination of perimeter heating systems. https://www.payette.com/glazing-and-winter-comfort-tool/

    f. Reduce air infiltration to at least 0.2 cfm at 75 Pa per C406.9. Note that air infiltration testing is now mandatory.

g. Incorporate ventilation energy recovery with an effeteness of at least 70% for class 3 and 4 exhaust.

h. Manage solar gains with external shading and/or low solar heat gain coefficient (SHGC).

2. Incorporate efficient electrification as follows: **DOER 11**

   a. Utilize full electrification of space heating with air source or ground source heat pumps.

   b. Utilize air source heat pump water heating.

3. Develop the following proposed scenario: **DOER 12**

   a. Building meeting July 2023 commercial stretch code

   b. Air source heat pump space and hot water heating

4. Evaluate incentives, including: **DOER 13**

   a. Estimate of Alternative Energy Credits;

   b. Estimates of MassSave® incentives, based on meeting with utility.

5. Evaluate 80% rooftop solar PV readiness for all buildings. Evaluation should include creating building roof plans showing location of PV readiness areas and location of roof HVAC equipment and other appurtenances. Provide table showing areas needed for code required PV readiness and proposed, above-code PV readiness. **DOER 14**

6. Provide EV equipment to at least 10-15% of the spaces and having at least 20-25% of spaces be EV ready. **DOER 15**

7. Include the following table for each proposed building (add rows as necessary):

DOER 16

	% of above grade vertical envelope	**U-value**
Framed wall		
Glazed wall system – vision		
Glazed wall system - opaque		
Operable fenestration (which is not part of glazed wall system)		
Inoperable fenestration (which is not part of glazed wall system)		
Doors		

Sincerely,

Paul F. Ormond, P.E.
Energy Efficiency Engineer
Massachusetts Department of Energy Resources

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CAPE COD COMMISSION

Via Email

January 12, 2023
Rebecca Tepper, Secretary of Energy and Environmental Affairs
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office, Purvi Patel, Environmental Analyst
100 Cambridge Street, Suite 900, Boston, MA 02114

Re: Environmental Notification Form
EEA No. 16640 (Cape Cod Commission File No. 22033)
Cape Cod Gateway Airport Master Plan Projects, Barnstable

Dear Secretary Tepper:

Thank you for the opportunity to provide comments on the above-referenced ENF. Because this Project requires an Environmental Impact Report ("EIR") in some form, it is deemed a Development of Regional Impact ("DRI") under § 12(i) of the Cape Cod Commission Act, c. 716 of the Acts of 1989. Cape Cod Commission staff reviewed the ENF and offer the following suggestions for the Applicant to consider as it prepares a DEIR.

The Cape Cod Gateway Airport Master Plan proposes multiple improvements—including runway extensions, taxiway modifications, and terminal expansion—to be completed in three phases. The ENF indicates the improvements are necessary to meet Federal Aviation Administration ("FAA") standards for airfield geometry and support current forecasted demand for airport use and hangar space. Commission staff recognize the need to comply with FAA standards but are concerned the proposal may impact sensitive natural resources protected by the Regional Policy Plan ("RPP"), including water, wetlands, and wildlife & plant habitat. To the extent feasible, the Applicant should avoid adverse impacts to these resources or provide appropriate mitigation where impacts cannot be avoided.

The Taxiway D relocation will impact NHESP BioMap Core Habitat and Critical Natural Landscape and wetlands, particularly in and around Upper Gate Pond where fill and/or a retaining wall are proposed. Wetland and wetland buffer alteration are generally not allowed under the current RPP. As noted in the ENF, prior DRI decisions required the Airport to maintain a natural undisturbed buffer of 200 feet in width from the high-water mark of the following ponds: Upper Gate Pond, Lewis Pond, Mary Dunn Pond, Lamson's Pond, and the two unnamed small ponds located near Lamson's and Mary Dunn Ponds, respectively. Vegetation removal is permitted in the buffer only to the minimum extent

necessary to comply with FAA line of sight and visibility requirements. The DEIR should assess whether the taxiway relocation could be designed to avoid work within the wetland buffer, and if not, provide additional detail about potential mitigation. The Applicant should provide further detail on any proposed tree clearing, invasive species management and potential vernal pools across the Project site. CCC 01 CCC 02

The ENF notes that Upper Gate and Lewis Pond have contaminants (polycyclic aromatic hydrocarbons and lead) present in their pond sediments, due to airport stormwater runoff. The Applicant should use available water quality monitoring data to demonstrate whether installed stormwater management systems are performing as designed in these areas. CCC 03

The proposed Project would increase impervious surfaces by approximately 21 acres over current conditions. While the ENF includes goals to create no net increase in stormwater runoff, provide treatment where needed, and follow post-construction best management practices ("BMPs"), additional detail should be provided in the DEIR. Commission staff recommend the Applicant specify which stormwater treatment systems will be used, installation location, capacity, and treatment performance. The DEIR should also include any available stormwater management plans and assess whether additional units could be added to treat runoff and capture pollutants. The ENF indicates that analysis of wastewater generation and treatment changes will be developed in the EIR process. The Applicant should include this analysis for review, and coordinate with the Town of Barnstable to ensure there is adequate sewer capacity to accommodate any additional flow. CCC 04 CCC 05 CCC 06 CCC 07

Thank you for the opportunity to provide comments on the Project. Commission staff are available to answer any questions you might have about these comments.

Sincerely,

Kristy Senatori

Kristy Senatori
Executive Director

Cc: Project File
Alyssa Jacobs, Epsilon Associates
Katie Servis, Airport Manager, Cape Cod Gateway Airport
Elizabeth Jenkins, Director, Barnstable Planning & Development
Barnstable Cape Cod Commission Representative, via email
Cape Cod Commission Chair, via email
Cape Cod Commission Committee on Planning and Regulation Chair, via email

View Comment

Comment Details

EEA #/MEPA ID 16652	**First Name** Robert	**Address Line 1** 1146 Route 28, Town Hall	**Organization** Town of Yarmouth
Comments Submit Date 1-12-2023	**Last Name** Whritenour	**Address Line 2** --	**Affiliation Description** Municipality
Certificate Action Date 1-31-2023	**Phone** --	**State** MASSACHUSETTS	**Status** Opened
Reviewer Purvi Patel, (617)874-0668, purvi.patel@mass.gov	**Email** rwhritenour@yarmouthma.us	**Zip Code** 02664	

Comment Title or Subject

Topic: EIR Scoping Comments Cape Cod Gateway Airport

Comments

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Comments Attached

Attachments

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TOWN OF YARMOUTH

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TOWN ADMINISTRATOR
Robert L. Whritenour, Jr.

ASSISTANT TOWN ADMINISTRATOR
William J. Scott

January 10, 2023

Ms. Purvi Patel
Environmental Analyst
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Via Electronic Mail
purvi.patel@mass.gov

Re: Environmental Impact Report (EIR) Scoping for Capital Projects at the Cape Cod Gateway Airport

Dear Ms. Patel:

The Town of Yarmouth has been actively monitoring and commenting on the findings and recommendations presented in the Cape Cod Gateway Airport Master Plan Update (AMPU). The capital projects recommended in the AMPU are now the subject of environmental reports and assessments to be presented to federal, state and local entities, as well as the general public, for review and approval prior to the potential issuance of permits for their implementation in accordance with applicable environmental regulations.

We have offered written, constructive comments on the AMPU reports, which have been well received by the Airport and have relevancy to the environmental documents that are to be prepared during the ensuing several months. Our comments below present the basis for the specific italicized text to be incorporated in the scope of work associated with the environmental documents.

Purpose and Need

This is an especially critical component of the environmental reports. A significant amount of time has passed since the AMPU was initiated and completed and the aviation industry is particularly dynamic. Consequently, there is merit in re-evaluating the basis for the currently proposed capital projects, in particular, the required runway length. We recognize that the topic of runway length is associated with Runway 15-33 and applies primarily to JetBlue Airlines and known and specific operators of business jet operators that are either based or frequently use the Airport.

We earlier noted in our comments to the Airport that the AMPU analysis considered a range of aircraft types (models, seating capacity and equipage -- engine model) and flight missions (nonstop stage length) for existing users and those anticipated. We also noted that not all models of the same aircraft are equivalent as operated in accordance with the users' flight performance operating procedures and manuals. These factors have a direct impact on the determination of the required runway length for takeoff and landing at the Airport. Our independent runway

length analysis determined that Runway 15-33 may justify an extension, but not to the extent presented in the AMPU.
We take this opportunity to note that in our earlier comments, we took exception to the use of a 15 percent margin in the runway length analysis for wet and contaminated runway surface conditions for turbojet-powered aircraft under takeoff conditions. This is contradictory to the FAA guidance, which allows for this margin only for landing runway length requirements.

Because the Airport is currently served by JetBlue Airlines and specific business jet operators, we strongly recommend that the scope of work incorporate the following text for the Purpose and Need section:

> *JetBlue Airlines and known and specific operators of business jet aircraft based at or that frequently use the Airport be queried with respect to (1) frequency of flight/weight restrictions and cancellations experienced due to the current Runway 15-33 length, and (2) the required runway lengths (takeoff and landing) to serve their current and anticipated specific aircraft models and equipage, and flight mission when operated in accordance with their Federal Aviation Administration (FAA) approved flight operations manual.*
>
> *In the event these operators are unable to provide this data, it is available from commercial sources as opposed to interpretation of the generalized aircraft performance charts offered by the FAA and/or aircraft manufacturers. These commercial sources often serve as flight dispatchers for airlines and high-performance aircraft users and, consequently, have the ability to provide an equivalent level of data to support the analysis of the required runway length for specific aircraft and equipage, and flight missions when these aircraft operate at the Airport.*

Runway Extension Alternatives

Should any extension to the length Runway 15-33 be justified as described above, the scope of work for the environmental reports should re-examine those options presented in the AMPU to provide that length for takeoff and landing. In this regard, we note that the AMPU presents a "balanced" approach to lengthening the runway at each end so as to equalize the distribution of aircraft noise impacts on communities northwest (Barnstable) and southeast (Yarmouth) of the Airport in terms of its size (area of impact). However, in our opinion, this "balanced" approach failed to consider the extent and density of residential land use in these impacted areas. **RW 02**
Observation of aerial views and the source of continuous noise complaints from residents clearly demonstrate that areas to the southeast of the Airport are more impacted by aircraft noise. Our earlier comments on the AMPU suggested that the then proposed extension of Runway 15-33 and that which we determined in our independent analysis take this and other factors into consideration. Accordingly, we offered a more preferred solution that would result in lesser aircraft noise impact on land uses to the southeast of the Airport.

Consequently, we recommend that the scope of work for the environmental reports that address alternative means to provide a runway extension, if any is justified, be incorporated as indicated in the text below. **RW 03**

> *Alternative means to provide the required runway length should consider balancing community aircraft noise impacts that take into consideration the location and density of*

residential development in areas surrounding the Airport. To the extent feasible and consistent with FAA airport planning guidance, runway extension alternatives that maximize the extension of Runway 15-33 to the northwest (Runway 15 end) be particularly evaluated. The continued application of displaced runway landing thresholds should be included in these analyses, especially at the Runway 33 end.

Aircraft Noise Analysis

Although not included in our earlier comments, we recognize the concern of our citizens that the use of average annual day-night aircraft noise contours is insufficient to address their concerns. This has been and continues to be a topic of considerable research by the FAA and others, and additional means to depict aircraft noise impacts are of value in assessing this component of the environmental reports. Consequently, we recommend that the following text be incorporated in the scope of work for applicable sections of the environmental documents. **RW 04**

Aircraft noise impacts should include the average annual day-night contours shown as the 55 Ldn through 80 Ldn in five-level increments, as well as single-event contours for the same Ldn increments as applicable to a range of aircraft types. These include the Embraer 190AR and Airbus A320 Classic as operated and configured by JetBlue Airlines; Cessna 402C and Tecnam P2012 Traveler as operated by Cape Air; Gulfstream IV, Bombardier Global 5000, King Air 200, and Cessna 172. These contours should be presented for the existing flight routes commonly flown at the Airport on each of the four runway ends, and for any future flight path recommended for aircraft noise mitigation measures. In the event that the FAA noise model database does not include these aircraft types, comparable aircraft models should be utilized. The intent of these single-event aircraft noise is to better reflect the aircraft noise impact that residents experience on a daily basis.

Aircraft Noise Mitigation

Airports are a source of aircraft noise and whenever feasible, actions to mitigate their impact should be examined in the preparation of the environmental documents. In our earlier comments on the AMPU, we recognized that the Airport has a voluntary aircraft noise abatement program in effect consistent within its purview as an airport operator and FAA guidelines that is presented in textural format. However, in addition to this voluntary initiative, there is a means to require aircraft operators to follow a prescribed departure flight path when operating under instrument flight rule regulations. Nearly all commercial flights and those conducted in high performance (business jet) aircraft operate under these regulations during all weather conditions. To this end, we earlier encouraged and gained the support of the Airport and the chief of the air traffic control tower to evaluate a standard instrument departure procedure for Runway 15. Accordingly, we request that the scope of work for the environmental reports include the following text: **RW 05**

Aircraft noise impact mitigation measures should include a feasibility study of the implementation of a standard instrument departure procedure for Runway 15 that serves to provide a definitive flight path and altitudes that minimize aircraft noise impacts on residential land uses southeast of the Airport. The feasibility study should utilize applicable FAA Orders and take into consideration the use of the airspace by aircraft operating to and from other airports in the region and radar coverage limitations as a means to define waypoints and/or ground-based navigational aids for the recommended

procedure. Up to three alternative standard instrument departure procedures may be evaluated. Aircraft noise contours may be incorporated in the analysis to qualitatively and quantitatively demonstrate the mitigation results. The alternative procedures will be reviewed with the Airport and air traffic control tower staff in the early and interim phases of the study, and then as part of identifying the preferred instrument departure procedure.

When determined to be beneficial in reducing aircraft noise impacts, the recommended standard instrument departure procedure should be referred to the FAA for its final design and implementation. The schedule for such procedure implementation is subject to FAA internal coordination, however, its need should be included as a condition of the approval of the recommended capital projects evaluated in the environmental documents.

Additionally, a graphic of the Airport-suggested voluntary aircraft noise abatement flight routes be prepared to accompany the current text as a means to better inform pilots and enhance aircraft noise mitigation measures. The analysis of aircraft noise impacts may signal a need to modify the existing voluntary noise abatement program.

Water Quality Impacts

Higher aircraft activity levels and the increased area of impervious surfaces associated with the proposed capital projects at the Airport introduces larger volumes of water runoff that need to be accommodated and treated before release. Additionally, Airport firefighting operations generate volumes of PFAS (per- and polyfluoroalkyl substances) contaminant, as does normal aircraft deicing activity. These impacts should be addressed in their respective portions of the scope of work for the environmental documents. At this time, we have not identified specific text for this component of the environmental documents. Our intent is to highlight this concern so that it may be addressed. **RW 06**

We trust that our comments will be assessed as valuable and appropriate for inclusion in the scope of work for the environmental documents and appreciate this opportunity to formally introduce them into the record. We will maintain our active participation in the environmental document review and comment period on behalf of the citizens of the Town of Yarmouth.

Sincerely,

Robert L. Whritenour
Town Administrator

cc: Ronald F. Price
QED Airport & Aviation Consultants
Board of Selectmen

View Comment

Comment Details

EEA #/MEPA ID
16640

Comments Submit Date
1-12-2023

Certificate Action Date
1-12-2023

Reviewer
Purvi Patel, (617)874-0668, purvi.patel@mass.gov

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Zip Code
02673-8313

Organization
Hyannis Park Civic Association

Affiliation Description
Individual

Status
Opened

Comment Title or Subject

Topic: Hyannis Park Civic Association MEPA Submission_EEA# 16640

Comments

Segoe UI | 10 pt | Paragraph

See attachment.

Attachments

Hyannis Park Civic Association MEPA Submission_EEA #16640.docx(null)

Update Status

Status

Accepted

SUBMIT

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HYANNIS PARK CIVIC ASSOCIATION, WEST YARMOUTH, MASSACHUSETTS

MEPA PUBLIC COMMENTARY – EEA # 16640

CAPE COD GATEWAY AIRPORT, MASTER PLAN, ENVIRONMENTAL ASSESSMENT

January 10, 2023

Hyannis Park Civic Association does not support the Cape Cod Gateway Airport's expansion of Runway 15-33. In the following statement we will outline the reasons why.

INTRODUCTION. Hyannis Park Civic Association is a community advocacy group representing the residents of over 500 homes in Hyannis Park in West Yarmouth, Massachusetts immediately south of the Cape Cod Gateway Airport extending to Lewis Bay. If you follow the vertex of the angle made by the intersection of the two runways across Rt.28 in a southerly direction, you would reach the community of Hyannis Park. Hyannis Park Civic Association has existed for over 60 years and is the oldest, continually active neighborhood association on beautiful Cape Cod. Our members are dedicated to the stewardship of our fragile ecosystem and the quality of life in this special place.

Hyannis Park is a coastal community of retirees, semi-retirees, and a growing number of remote knowledge workers and their families. Our community is one the most diverse in Yarmouth—both ethnically and economically. From Town of Yarmouth archives, Hyannis Park was the site of essential ramparts during the War of 1812. Hyannis Park as a residential community was first developed in the 1890s from existing farmland. Some of our residents have lived here for many generations. During the pandemic we have enjoyed an influx of younger, remote-working homeowners.

For over a hundred years Hyannis Park has been a haven for outdoor enthusiasts. Most of Hyannis Park's beaches are open to the public and are utilized by guests of the motels and hotels along Rt.28, representing an important contribution to the local economy. Fishing and shell-fishing in our Mill Creek has been a staple for our recreational life in the Park. That has been curtailed due to PFAS contamination researched by Harvard's T.H. Chan School of Public Health.

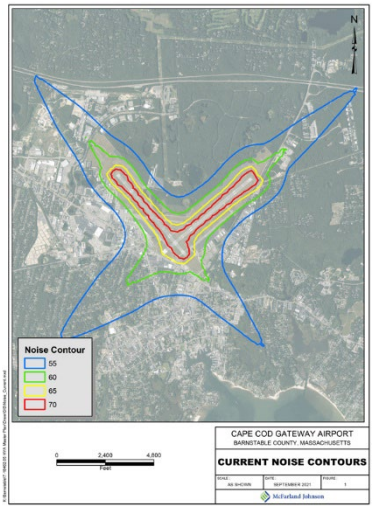
HYANNIS PARK AND THE AIRPORT. Due to the proximity of the Cape Cod Gateway Airport, Hyannis Park has always had a relationship built on a commitment of coexistence. We received numerous assurances through the decades that no expansion would be planned, since our buffer zone was at its maximum level. FAA officials agreed that the location of the Airport was unfortunate and would not meet today's standards. From these declarations of a recognition of our issues, Hyannis Park was lulled into believing that we were safe from the threat of

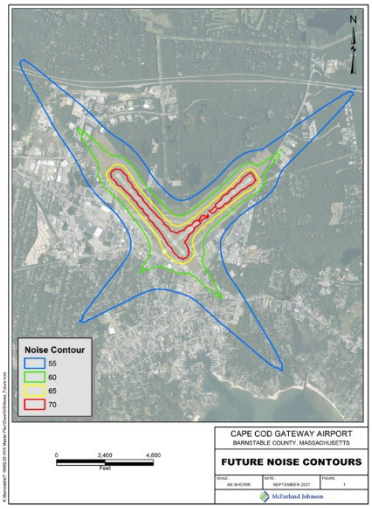
expansion in perpetuity. Through the years Hyannis Park met regularly with Airport staff in Community Work Group (CWG) sessions reporting on excessive noise and deviations of individual flights. We were always afforded some consideration by former Airport staff. Pilots were briefed on being respectful of our neighborhood. We coexisted.

HYANNIS PARK TODAY. Since the inception of the Master Plan process, all dissemination of information has strictly been formalized in legal notification formats. Community Work Groups were halted. In lieu of our CWGs, we were invited to Airport Commission meetings. These meetings were no longer friendly, Hyannis Park-centric discussions. We became interlopers, devoid of any "standing" in these meetings. We sent representation to keep some semblance of a dialogue. But no one was listening. We were told that pilots could not be briefed about flights over our Park. They were now autonomous. Our complaints were viewed as petty. We were deemed "noise sensitive." We are being sacrificed. **HPCA 01**

THE ISSUES. Noise is an issue over our community. Noise testing conducted by the Airport in our community has always been problematic for our residents. Twenty-four hour average noise tests have never told our story. We are a coastal community. We spend our lives with windows and doors open. We live by the sea to enjoy this beautiful seaside environment. Air traffic noise is a problem. Single event noise testing would be more appropriate to evaluate noise levels. Many residents cannot sit on their porches or patios because of singe-event noise. Conversation interruptions are commonplace. Those of us who work remotely are interrupted in our remote conferencing. This is a real problem. Residents have stopped complaining to the Airport, because no solutions are being offered. This had not been the case with previous administrations. Pilots were talked to and advised before taking off to respect the relative quiet of our neighborhood. **HPCA 02**

The noise contours that were initially presented in the Master Plan presentation (not the ones presented at the MEPA presentation) were shocking to our community. See below.





The noise area outlined in the map titled Future Noise Contours is completely unacceptable to us. The Airport management knew what our reaction would be. The solution was to marginalize us and our concerns by the termination of the Community Work Group meetings. Suddenly we were dubbed "noise sensitive." The truth is we cannot tolerate any increase in noise from the Airport. Therefore, we cannot support the Airport's efforts in expanding Runway 15-33.

HPCA 03

The second issue and the most devastating is the contamination of our Mill Creek. Cape Cod Gateway Airport shares the Lewis Bay Watershed with Hyannis Park. Whatever toxic spills occur on the Airport flow to our homes. The fragility of our shared watershed is well documented in Cape Cod Commission documents. With Yarmouth's Hyannis Park directly downstream of the Airport, this has proven to be disastrous. In the case of Mill Creek, we were never notified by any entity of our exposure to PFAS. We learned of the contamination from a Silent Spring Institute webcast that cited the research by Harvard's T.H. Chan School of Public Health entitled "Isolating the AFFF Signature in Coastal Watersheds Using Oxidizable PFAS Precursors and Unexplained Organofluorine", by Bridger J. Ruyle,* Heidi M. Pickard, Denis R. LeBlanc, Andrea K. Tokranov, Colin P. Thackray, Xindi C. Hu, Chad D. Vecitis, and Elsie M. Sunderland, *Environ. Sci. Technol.* 2021, 55, 3686−3695.

In the case of the movement of the Airport's plume of PFAS cited by Mass DEP in its 2021 audit, it is headed south, southeast—to Hyannis Park. The Airport's consultants state this fact in their submission to Mass DEP. The Airport's asphalting over the plume is not remediation but mitigation. These mitigation efforts that the Airport employed would be acceptable, if they only involved the Airport property. But the contamination extends to our community. We need a real remediation solution in order for Mill Creek to eventually clear out. Capping the Airport plume is inadequate when considering the downstream contamination.

In the Harvard study, Mill Creek was shown to be contaminated by PFAS from AFFFs (aqueous film-forming foam). Massachusetts Department of Environmental Protection has ordered both the Airport and Barnstable's former Fire Training Academy to clean up their foam areas. As a result of these disposal sites, residents of Hyannis Park cannot enjoy any of the Cape's finest shellfish or fish in this beautiful river due to the contamination. Mill Creek is and has always been the center of recreation for the area of Hyannis Park called Grist Mill Village. Children have been swimming and wading in these waters for centuries. That is now all curtailed, due to the elevated PFAS levels detected by Harvard researchers. How many years or decades do Hyannis Park residents need to wait until this contamination clears out? We have no answers from the Airport, only a chorus of "we were not the source of the problem." There is no scientific evidence that PFAS in the ground can be "fingerprinted," as the Airport contends. Like these forever chemicals, our residents are not going anywhere. We will continue to probe for answers. We do not care who was responsible. What we want is a real solution. And PFAS researchers have stated there is no solution without upstream remediation. We hope that this submission will bring attention to Hyannis Park problems. And you will choose to help us moving forward.

In summary Hyannis Park is in “survival mode” with regard to our dealings with the Airport. Any expansion of operations into our already inadequate buffer zone is deemed unacceptable. **HPCA 04**

Signed,

Hyannis Park Civic Association, Executive Committee

Linda Bolliger, President
Nancy Smith, Vice President
Christine Greeley, Treasurer
Helen Shah, Secretary

Patel, Purvi (EEA)

From: Paul Phalan <phalanpaul@gmail.com>
Sent: Friday, January 6, 2023 9:54 AM
To: Patel, Purvi (EEA)

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Ms Patel
please disregard my previous email.

To whom it concerns at the MEPA,

I'll try to be brief and precise. Please know I'm at a GREAT disadvantage due to not being an expert in this field. I along with thousands of residents will be negatively affected by this proposal.

I'm 1000% against the proposed project at the CC airport.
1-The sound testing presented so far has been shoddy, old and inaccurate! **PP 01**
2-Planes burn aviation fuel that spreads carcinogens and other **toxins** everywhere we reside! **PP 02**
3-the proposed work isn't required by the FAA! **PP 03**
4-the CCGA is empty every day I drive by. It has periods in the summer of being busier. This project is only beneficial to a few corporations and affluent citizens! **PP 04**

Respectfully,
Paul Phalan
Barnstable, Ma

Patel, Purvi (EEA)

From: Susan Sulkoski <sulkoskis@gmail.com>
Sent: Saturday, January 7, 2023 12:00 PM
To: Patel, Purvi (EEA)
Subject: Hyannis Gateway Airport public comments

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Dear Ms Patel:

I Attended the hearing at the Hyannis airport on January 5, 2023 at 11 AM. I found your presentation to be very helpful, but perhaps better presented not as an expansion, but more as a twenty year improvement plan to upgrade and meet FAA codes.

I certainly understand that it is the necessity of bringing the airport up to FAA current code. I also understand my neighbors reticence to the issue, however I live at the very closest point of the Hyannis Park neighborhood to the end of runway 15-33. Our small corner of the neighborhood is compromised of full time hardworking multiethnic people living in a variety of housing accommodations. We are not bothered by the noise. To us it is a reminder of economic prosperity.

I'm a retired school teacher and my husband is a retired blue-collar worker we have a modest home down here to which we retired to 10 years ago. We would be extremely happy if there was a JetBlue flight to Fort Lauderdale. That way we wouldn't have to drive all the way to Worcester to avoid Boston or TF Green. My neighbors travel frequently to visit family abroad, and I'm sure they would appreciate more convenient travel. We are not the wealthy "nabobs" alluded to at the meeting that would use the airport. We are hardworking people who enjoy travel and convenience.

In conclusion, I find the proposed plan a more than fair compromise to the neighbors of 15-33 and a necessity for safety and a thriving community. The airport has worked very hard to address current and future environmental issues. I believe they will continue to do so. **SS 01**

Sincerely,
Susan Sulkoski
15 Cleveland Way, West Yarmouth, MA 02673
Smsulk@ yahoo.com
--
C

Patel, Purvi (EEA)

From: Tom <tjsully46@comcast.net>
Sent: Tuesday, January 10, 2023 11:19 AM
To: Patel, Purvi (EEA)
Subject: Hyannis/ Gateway Airport ID #16640
Attachments: MEPS HyA Airport 1.docx

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Please accept my response to the Planned Runway Expansion at the Hyannis Gateway Airport
Please see Attached. Document.

Tom Sullivan

Thomas J Sullivan
14 Bunting Lane
West Yarmouth Ma 02673
tjsully46@comcast.net
508 237 8928

TO: MEPA Office 10 January 2023

100 Cambridge St. Suite 900

Boston Mass 02114

REF: Project No./ID 16640

Hyannis /Gateway Airport

Attn: Mrs. Purvi Patel

Dear Mrs. Patel:

First I want to thank for holding the meeting on January 5th. I mentioned at the meeting I have been involved with the Airport as the former Chair of the Town Of Yarmouth Airport Advisory Committee during the hearings on the Airport Terminal Project, and I have kept up on the projects at the Airport.

The Barnstable / Gateway Airport has a long history of pollution on the ground. A plume was discovered in front of the old terminal and was moving in an easterly direction. Today that same plume which starts at the Cape Air Hangar, has immigrated off the Airport to the Mahar Water Wells. The Town of Barnstable had to spend 500,000 dollars to put in a Water filtration system to clean out the contaminants, contrary to what the airport is saying that the plume didn't go to the Marhar water wells; the same wells are now showing PFAS contamination. Why is this important to Yarmouth? Yarmouth has water wells that are stones through from this area. The Town had to put in test wells to monitor to see if the pollution would get into the Town's water. Any extension of 15/33 should require all groundwater pollution to be removed adjutant to Runway 15/33 to include Lead contamination from the Cesena 402s owned by Cape Air. It has been found in the Storm Water runoff system, before any project is approved. **TS 01**

Thomas J Sullivan
14 Bunting Lane
West Yarmouth Ma 02673
tjsully46@comcast.net
508 237 8928

Upper Gates Pond/ Delta Taxiway

Upper Gates Pond sits in between both runways. The Stormwater system discharges into this pond. It was discovered that the pond had high levels of lead in the pond sediment, and the decision was made not to remove the sediment because it's sitting on top of the aquifer. With Delta Taxiway modifications being planned, Upper Gates Pond sediment should be eradicated before it seeps into the Aquifer. This is the same Aquifer, the Sagamore Lens, the Mass Military Reservation sits on. We shouldn't have a Double Standard for cleaning up groundwater pollution. The Air Force had to clean up its mess, and the same standards and strict compliance with State and Federal Laws must be held to the same level, complied with. **TS 02**

With Modifications to Delta Taxiway and a New Engine run up area, the present plan is not acceptable. The Run-up pad should be in-closed to suppress the sound to support turbine and piston aircraft. The Airport is located in a densely populated area. **TS 03**

Buried Materials.

I mentioned at the public hearing that it was brought to my attention that the Army/ Navy buried lots of materials before they gave the airfield back to the Town. The Army/Navy used the field from 1940 to 1946 for flight training. The mentioned items are vehicles, the fuselage of aircraft, and 55 gallons drums. It was mentioned at the public meeting that the Airport, through Ground Wave Sonar, detected an anomaly in the ground near runway 06. This has to be further investigated, and if any buried items are found, they must be removed along with any ground contamination. It was also mentioned at the hearing that there are several areas at the airport where items are buried; this also has to be investigated, and remedial action must be taken before the airport can expand the runways and taxiways. **TS 04**

Thomas J Sullivan
14 Bunting Lane
West Yarmouth Ma 02673
tjsully46@comcast.net
508 237 8928

Noise Study:

The Airport showed a slide of the present noise contours. The contours need to be updated since they were made in a study in 1998 with Cape Air piston aircraft, using Cape Air Pilots. The owner of Cape Air was a member of the Barnstable Airport Airport Commission sub-committee at the time and had a finical interest in the study since his HQ is located at the Airport. Cape Air should never have been used. **TS 05**

A new Noise Study (Part 150) should be conducted with a mix of Piston aircraft and Turbines, including Commercial and Corporate Jets. The study would have to include different Turbine Stages, especially Stage 1 aircraft since the airport now allows them into the airport. A new Part 150 would also show an increase in the 65 noise area around the airport and an expansion of the Flight Paths into the Town of Dennis and Harwich, possibly putting an air restriction over the Towns as the Airport has over the Town of Yarmouth with no Easements granted. The Town was denied by the Airport and FAA to allow a wind Turbine to be put up at the Landfill.

In Closing there should no Runway expansion allowed at the Airport and the statements by the Barnstable Residents must be taken seriously in thei statements to Close the Airport. There is an Alternate site for this Airport and that site is at Otis wher it shouldbe moved. **TS 06**

Respectfully Submitted

Thomas J Sullivan

Patel, Purvi (EEA)

From: Chris Greeley <greeleyc@comcast.net>
Sent: Wednesday, January 11, 2023 11:06 PM
To: Patel, Purvi (EEA)
Subject: My comments on Project 16640
Attachments: airport opposition 1-11-12.docx

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Attached are my comments following the zoom meeting I attended on January 5, 2023.
In searching the website, I found it difficult to determine exactly how I was to send this, so I am emailing it directly to conform with the timelines and will also mail a formal copy to 100 Cambridge Street.
Please let me know if I have failed to do this correctly., as I am very concerned about significant unaddressed environmental issues about the project.
Thank you,
Chris

Christine K. Greeley
48 Glenwood Street, West Yarmouth, MA 02673

MEPA
Purvi Patel
100 Cambridge Street
Suite 900
Boston, MA 02114
January 11, 2023

Re: Cape Cod Gateway Airport Project #16640

Dear Ms. Patel,

I am writing to express my concerns and strong opposition to the Runway 15/33 expansion currently proposed in this project.

I have been a resident of Hyannis Park since 1981. Hyannis Park is a Yarmouth residential neighborhood created in the mid-1890's- established decades before any form of the airport existed. Since the mid-1980's I have worked to improve cooperation/operations at the airport and reduce the environmental impact of its operations on the neighborhood and the Town of Yarmouth.

I served as the 1st Yarmouth Representative to the Airport Commission decades ago, and since then have been an active observer at Commission meetings and participant in various project reviews. As a consequence, I believe that I am very aware of the decades of concerns that have not been effectively addressed and resolved by the airport.

In the mid-1980's the airport sought an expansion and alleged that the neighbors had encroached on the airport knowing it was there (not factual for Hyannis Park residents). The FAA, in response to the significant issues raised, required a Part 150 Noise Study to be completed in 1987. Our neighborhood had serious concerns about how it was conducted as the equipment was placed in areas not as impacted and at times of the year with traditionally less air traffic. The outcome led to what were "voluntary rules" for flight paths and flight times that have never been complied with by significant numbers of pilots, especially as they chose to use VFR, not IFR flight paths.

I believe that the expansion of Runway 15/33 should not take place in such a congested and environmentally fragile area. In fact, at a meeting with FAA executives in their Burlington, Massachusetts office in the 1980's they stated to me that if Barnstable was to come to them with an application to build an airport in this location at that time, they would deny the project!

I have attempted over these decades to "accept" that many of the actions the airport has undertaken have not resulted in any significant cooperation from pilots and the operation of their aircraft; significant environmental/pollution issues from the airport and its tenants have been ineffectively addressed; and nothing has truly addressed the over-flights, noise issues and environmental air pollution in abutting neighborhoods. It is time to face the fact that the location of this airport can not support any additional expansion!

I add the following observations and concerns to those probably expressed by others:

1. This truly is a "If you build it, they will come" proposal. I state this as you look at the decline, by their own admission, from prior annual enplanements of 200,000 to the current 30,000. This, as the Airport Manager has been describing at current Commission meetings her meetings at national Airport Roundtables where she is attempting to attract additional airlines to come and use this airport! **CG 01**

   The airport is funded under an Enterprise Account of the Town of Barnstable. This necessitates the airport to not cost the town money. Their CARES Act grant funds, and sale of jet fuel over the past several years has enabled them to meet this obligation. However, the ending of those funds will mean significant issues if they can't find other revenue sources. Therefore, attract more aircraft, sell more hanger space and generate fuel sales revenue- all at the expense of their abutting neighbors! Yarmouth derives no benefit from their operations, but incurs environmental issues and impingement on the quality of life in our town.

   They have recently expanded the Mary Dunn Road Extension and are entering into potential hanger agreements for helicopter operations, air flight training and aerial tours- all of which were never undertaken by prior Commissions because of their significant impact on neighborhoods!

2. The environmental issues emanating from airport and tenant operations are overwhelming and in an evolving period of discovery. From PFAS contamination and incomplete containment; significant degradation of watersheds; untreated, buried undisclosed materials; the need for a waiver or accommodation to expand over wetlands; and now increased paving over this environmentally sensitive area- the list grows! You have the various technical studies and questions that I do not need to elaborate on that document the major evolving, unresolved issues. **CG 02**

3. Runway 6/24 will be closed for the majority of 2023 as an extension and runway improvements are undertaken. Why then, with that new FAA standards runway, is an additional runway truly needed to meet the hoped-for arrival of jets they are trying to attract? Why would it not be more appropriate to open the new runway, clean up and further assess the significant environmental issues of the entire site and see what demand will truly be. Then take a look at what and where there is need? The alternative **CG 03**

site repeatedly mentioned would be at Otis where so many of the issues are either already addressed or not a concern.

4. The safety issues and potential for a significant life-threatening disaster exist at this site. The fact that they will need "easements" on others property is a major concern! So much for the 1980's statements about others encroaching on the airport- they are now encroaching! In addition, the Town of Barnstable over the past several years has permitted extensive residential development of multi-story apartment complexes at their end of Runway 15/33. A major electrical substation is currently being constructed in that same area to address the needs of the new Vineyard Wind ocean-based turbines. The Hyannis Park neighborhood at the other end has no significant new residential construction, however Lewis Bay has been the site of the 2 recorded fatal aircraft crashes. Increased air traffic on either end of an extended Runway 15/33 increases the potential for such an event. Runway 6/24 is already a deeply concerning hazard given the major roadway and busy shopping plaza at its end. There does not need to be increased air traffic in such vulnerable areas that abut both runways at this airport. **CG 04**

5. During the past several years, as fuel costs escalated, there has been increased "short cutting" flights over our neighborhood with no resolution. The airport prides themselves on their Noise Complaint Office that merely serves as an exercise in futility. Hence, most have given up on making formal complaints. When you do complain, there is always an excuse for the inappropriate flight track- from pilots using VFR and needing to choose their best route; to the Tower is closed at that hour therefore flights are unregulated; to just the issue that all of the purported flight tracks are "voluntary and they will speak to the pilot". **CG 05**

   I believe that the Noise Contours diagrams presented with this project are significantly flawed as they are based on averaging events at this airport in such a way as to make the contours look smaller and insignificant. A Noise Study based more realistically on actual air traffic hourly patterns and the actual seasonal nature of air traffic would show that the true contours and range of noise pollution is occurring in seriously larger areas to higher numbers of abutters.

   I am not a regular complainer, but for the first time in a number of years I filed two complaints this year. The response I received was absolutely incredible. I was sent flight track photos that showed the planes coming in on a direct northerly path from over Lewis Bay. The actual path I observed was nowhere near that, but rather an easterly path from Hyannis Harbor with a direct left turn north over my house. Had the planes been on the path sent me by the airport Noise Complaint Office, I would not have complained!

On further questioning I was told, and you heard during the zoom meeting, they are unable to track a significant majority of the planes using the airport and hence abusing the “voluntary” approach/departure flight tracks! Please stop claiming you are working with abutters on the environmental nightmare of noise in their homes and lives. The idea of expanding this runway for more uncontrolled air traffic so closely over our homes is a major environmental issue- for noise and any fuel residue/emissions pollution generated during take-offs and departures! This is something that needs much more study and documentation before any runway expansion. **CG 06**

I believe that this proposed project is significantly flawed. There needs to be additional serious studies undertaken to truly assess the environmental impact on our water, land and the health and quality of life of too many residents. This project needs a major “time out” before decisions are made.

Thank you for your outreach for public comment- we are the ones whose lives will forever be impacted 24/7 and are gravely concerned for so many reasons beyond even the ones I have mentioned.

Sincerely,

Christine K. Greeley

View Comment

Comment Details

EEA #/MEPA ID 16640	**First Name** Betty	**Address Line 1** Box 484	**Organization** --
Comments Submit Date 1-12-2023	**Last Name** Ludtke	**Address Line 2** --	**Affiliation Description** Individual
Certificate Action Date 1-12-2023	**Phone** --	**State** MASSACHUSETTS	**Status** Opened
Reviewer Purvi Patel, (617)874-0668, purvi.patel@mass.gov	**Email** bettyludtke@verizon.net	**Zip Code** 02647	

Comment Title or Subject

Topic: Additional Alternative Required for DEIR

Comments

Segoe UI | 10 pt | Paragraph

While I find the ENF to be well written and comprehensive, I believe a viable alternative has not been appropriately studied. My request, as we move forward to the Draft Environmental Impact Report (DEIR) stage is to include this alternative. That alternative is the joint use of the airfield at Joint Base Cape Cod.

There is a vastly underutilized airfield with substantially larger runways and miles of clear zones located about 12 miles as the crow flies from this airport. It is the airport complex associated with Joint Base Cape Cod. We should all be the best stewards possible of our federal, state and local resources, whether those be existing infrastructure or future funding. Not studying this as a potential joint use airfield seems like a dereliction of duty.

On our current path, we are committing a substantial amount of resources to expand operations at the already congested Cape Cod Gateway airport. Before we do this, we should study a joint use solution at the airfield at Joint Base Cape Cod. I appreciate the fact that Joint Base Cape Cod has never been a joint use airfield and civilian facilities are lacking, but the basic airport infrastructure and clear zones at Joint Base Cape Cod merit its review as an alternative. They are vastly superior to those at the Cape Cod Gateway airport.

The Cape Cod Gateway airport deserves commendation for how they operate their airport given the constraints of their location. Their environmental stewardship is impressive. However, this does seem the opportune time to include the alternative of a joint use airport and Joint Base Cape Cod. The Cape Cod Gateway airport could serve beautifully as a general aviation facility and ideally include a robust flight school serving all of Barnstable County. Smaller aircraft could also continue to operate as they do today, safely and effectively. Larger aircraft and private jet type aircraft could operate into Joint Base Cape Cod. Connections to the islands, Hyannis, Harwich and Provincetown could link the entire system.

It is time to seriously review a joint use airfield at Joint Base Cape Cod and my hope is that this alternative is included in the DEIR. Thank you for your consideration of this request.

BL 01

Attachments

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Status

Accepted

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Patel, Purvi (EEA)

From: Don Englert <donald.w.englert@gmail.com>
Sent: Thursday, January 12, 2023 1:23 PM
To: Patel, Purvi (EEA)
Subject: Airport

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dear Sir/Madam,

This email is in regard to the expansion plans and plane activity at the Barnstable Airport.

My family has owned a home in Lewis Bay since 1984. We have enjoyed swimming in Lewis Bay Harbor during the summer months. In the last few years the planes going directly over our neighborhood have increased dramatically. The planes are flying much lower, more frequent, and are much noisier. The smaller planes going to the Islands are the loudest. In addition to constant noise pollution from the planes a big concern is potential pollution of Mills Creek and Lewis Bay resulting from plane exhaust. **DE 01**

The airport corp does not seem to care about the surrounding neighborhoods and its only concern is expanding the airport to allow for more and larger planes. I am completely against expansion of the Barnstable Airport as recent years plane activity shows no consideration for the surrounding neighborhoods around it. **DE 02**

Donald Englert - homeowner

View Comment

Comment Details

EEA #/MEPA ID	First Name	Address Line 1	Organization
16640	Elissa	--	--
Comments Submit Date	**Last Name**	**Address Line 2**	**Affiliation Description**
1-12-2023	Buja	61 Harbor Rd	--
Certificate Action Date	**Phone**	**State**	**Status**
1-12-2023	--	--	Opened
Reviewer	**Email**	**Zip Code**	
Purvi Patel, (617)874-0668, purvi.patel@mass.gov	LISBUJA@GMAIL.COM	--	

Comment Title or Subject

Topic: Runway expansion....

Comments

It's a beautiful summer day on Harbor Rd in the quiet neighborhoods of Hyannis Park. Home owners sit idly by in comfortable chairs overlooking Lewis Bay, chatting happily.....suddenly a low rumble is heard in the distance, growing louder and louder...making it impossible to continue a conversation until the Jet Blue flight passes over head...for the second time that afternoon. The whine of smaller jets buzzing as they make their way to and from the Gateway airport an almost constant annoyance ringing in our ears as Summer rolls thru in all its splendor.Conversations stop...again and again. Those occasional, yet still daily low fliers you swear will crash land into the former cranberry bogs one of these times. Inside the home,despite having just spent thousands on new windows, glass cabinets rattle in their frames, chotskies slide across windowsills, ceilings crack. In winter, without benefit of leaf cover, engine drones reverberate on windows. This is our truth, year round. A "gentleman's agreement" rarely honored, as more and more smaller plans haphazardly drift across Lewis Bay any way they choose to line up for runway 1533.

This "Gateway" needs to worry about fixing current problems before creating newer, larger ones. Thank you.

EB 01

Attachments

Update Status

Status

Accepted

SUBMIT

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BACK TO SEARCH RESULTS

Patel, Purvi (EEA)

From: Lucinda Abrecht <grassflowerknits@gmail.com>
Sent: Thursday, January 12, 2023 1:03 PM
To: Patel, Purvi (EEA)
Subject: Cape Cod Gateway Airport project #16640 - Environmental concerns

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dear Ms.Patel, I am very concerned with the #16640 proposal. Trying to extend runways and involving Jet Blue, seems like they are attempting to put a "Big City" airport in a very small, congested town, which makes no sense except for the Big Corporations trying to make profits with no concerns for the surrounding population. Many of us have had family homes here for generations, before any airport existed and this is not what we signed up for and paid taxes for. My family has had a home in Hyannis Park on the shores of Lewis Bay since 1910. I have seen the changes throughout my lifetime and from photos and stories from before. Between all the frequent and abundant Ferry traffic on Lewis Bay and now Airport pollution, our area is becoming environmentally devastated, Lewis Bay is polluted and deteriorating and now we have to add all the pollutants from overhead jet,plane and helicopter emissions. I attended the January 5th meeting at the airport and although noise pollution was addressed, many other very concerning environmental issues were not mentioned. I am very concerned about all the gas, oil and other plane and jet emissions that are being released and filtering down on our homes, residents and vegetable gardens. WHAT exactly are we being exposed to daily and has anyone thoroughly researched these ill effects? The Airport project officials aren't concerned because they don't live on Cape Cod or in the immediate location surrounding the airport. No one seems to take our concerns seriously - it's all about money and greed. but we the residents are the ones who will suffer and pay the price. This has got to STOP and that is why we turn to you, MS. Patel to stand up for what's right and environmentally sound. I was especially appalled to hear the nightly news the very evening of January 5th after the meeting, citing that research has shown that the Lead levels [Pb } in children's blood are significantly higher in children living closer [1 1/2 mile radius of airport] than children who live farther away. This was shocking and I had to do my own research on this, which I suggest you do as well. The study revealed aviation gasoline is currently the largest source of air pollution by Lead in the U.S.. Lead's toxicity is known for adversely affecting the nervous system, immune system and kidney function, as well as interfering with the reproductive and developmental systems and the cardiovascular system. This Lead, although banned from automobile gasoline,
is still present in aviation gasoline. This alone should be of utmost concern.

LDA 01

LDA 02

Of course I also would like to address the enforcement of flight paths and who would be accountable for enforcing that. Secondly, how will toxic chemicals be tested for on a yearly basis in surrounding water sources and grounds, and who would be held accountable for that. There are too many questions with no answers to continue on with this Cape Cod Gateway Airport project. Let's slow this project down and really study the facts so that the well-being of our local residents are put as the number one priority. Thank you for hearing and helping the people in this area.. we so desire to live in a clean and healthy environment. With sincere thanks for your continuing help, Lucinda Van Doren-Abrecht 4 Malfa Road 508-280-8881 West Yarmouth, Ma.

LDA 03

LDA 04

View Comment

Comment Details

EEA #/MEPA ID	First Name	Address Line 1	Organization
16640	--	--	--
Comments Submit Date	**Last Name**	**Address Line 2**	**Affiliation Description**
1-12-2023	--	--	Individual
Certificate Action Date	**Phone**	**State**	**Status**
1-12-2023	--	MASSACHUSETTS	Accepted
Reviewer	**Email**	**Zip Code**	
Purvi Patel (617)874-0668, purvi.patel@mass.gov	Maureen@ProducerToProducer.com	02673	

Comment Title or Subject

Topic: NO to the Expansion of the Cape Cod Gateway/Hyannis Airport

Comments

I live in West Yarmouth about 1.5 miles from the Cape Cod Gateway/Hyannis Airport. Me, my family and neighbors will be negatively impacted by the proposed expansion of the airport per the Master Plan EEA#16640. The noise will greatly increase and have a horrible impact on quality of life, environment and NOISE in our small, middle class neighborhood. At a time when climate crisis is having big impacts on the Mid-Cape and the environment being degraded with algae and bacteria blooms, it is no time to increase noise and pollution in this area of the Cape. Additionally the plans to rejuvenate the bog/vegetation near Cape Cod Hospital to improve the environment, the Airport would take away and delete any improvements by that expensive and much needed project. **AN 01**

Additionally, this airport has LOST airline usage over the last 10 years and there is LESS of a need for air travel moving forward. With the electrification of personal vehicles and the tremendous cost to the climate of air travel, this plan goes against what the area will need over the next 10-30 years. It's important for the planners to stop this work and move towards spending time and money on things that will grow the economy which is affordable housing and environmental improvements. This is going in the exact OPPOSITE direction. PLEASE stop the time/money/work on this Master Plan that will be a white elephant if completed and work on projects that will IMPROVE quality of life and the environment for all of the citizens and the many visitors for the future. Please be forward thinking and NOT backward thinking and plans. This is truly an anachronistic view of what the Cape needs at this momentous time in the history of this beautiful peninsula. Thanks for this public facing process. **AN 02**

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Comment Details

EEA #/MEPA ID	First Name	Address Line 1	Organization
16640	Richard	169 Katherine Rd	--
Comments Submit Date	**Last Name**	**Address Line 2**	**Affiliation Description**
1-12-2023	Mikolajczak	--	--
Certificate Action Date	**Phone**	**State**	**Status**
1-12-2023	--	MASSACHUSETTS	Opened
Reviewer	**Email**	**Zip Code**	
Purvi Patel, (617)874-0668, purvi.patel@mass.gov	richard.mikolajczak@gmail.com	02632	

Comment Title or Subject

Topic: Cape Cod Airport Extension

Comments

Hello. I recently moved to Centerville MA from East Falmouth MA and enjoy my quiet time here. By increasing the airport in Hyannis is absolutely NOT necessary. Bringing in the noise, the pollution and the rich tourist that don't care about our Cape is not the best option we have available. Since the pandemic, traffic has been horrendous. Adding more planes into the area is not the option. Why not bring the train in on a full time schedule instead of only the summer? More people that actually live here and can afford transportation would be happy to use another option to go to Boston other than a bus, car or plane. NO EXPANSION!

RM 01

Attachments

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Status

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Patel, Purvi (EEA)

From: Kathleen L Benson <be97@stanford.edu>
Sent: Thursday, January 12, 2023 10:31 PM
To: Patel, Purvi (EEA)
Subject: FW: Request
Attachments: Barnstable Airport Expansion.docx

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At the request of Betty Ludtke.

From: Kathleen L Benson
Sent: Thursday, January 12, 2023 3:26 PM
To: Lovell, Cynthia <Cynthia.Lovell@town.barnstable.ma.us>
Cc: Council@town.barnstable.ma.us; Nathan Rawding <nrawding@epsilonassociates.com>
Subject: RE: Request

Dear Ms. Lovell,
Please see the attached comment.
As you likely recall, previously we tried to send these comments to the designated address, but it was not recognized
Thank you.
Robert Berry
(This account is shared with Kathleen Benson)

From: Lovell, Cynthia <Cynthia.Lovell@town.barnstable.ma.us>
Sent: Wednesday, January 4, 2023 3:57 PM
To: Kathleen L Benson <be97@stanford.edu>
Subject: RE: Request

Good afternoon

You can email directly to the Council by sending your comments to Council@town.barnstable.ma.us

I will send an email to the Airport Director for the correct link and send that to you.

Cynthia Lovell
Administrator
Town Council
Cynthia.lovell@town.barnstable.ma.us
774-320-5954

From: Kathleen L Benson [mailto:be97@stanford.edu]
Sent: Wednesday, January 4, 2023 3:39 PM
To: Lovell, Cynthia
Subject: Request

We would like to submit a comment on the proposed airport expansion but the e-mail address to which comments should be sent is not functional:
Delivery has failed to these recipients or groups:
evirohya@epsilonassociates.com
The address you sent your message to wasn't found at the destination domain. It might be mis-spelled or it might not exist.

Moreover, we would like the e-mail address of the Town Council because we want to submit our comments there it because our comments address an underlying issue which it should consider.
Thank you.
Kathleen Benson
Robert Berry.

CAUTION:This email originated from outside of the Town of Barnstable! Do not click links, open attachments or reply, unless you recognize the sender's email address and know the content is safe!

January 12, 2023

Barnstable Town Council
Airport Commission of the Town of Barnstable

This comment does not directly address the environmental impact of the recently proposed expansion of the Barnstable Municipal Airport. Instead, this comment addresses the underlying justification and financial responsibility for the expansion itself. This comment assumes that the Town's financial control over the Airport Commission allows the Town to consider the broader issues raised in this note.

Assuming the airport is wholly owned by the Town of Barnstable, it appears that the Town will ultimately be responsible for bearing the entire cost of the expansion of the airport including financing costs (which could entail a bond issue unless the Town receives funds from the FAA's AIP program). The issue facing the Airport and the Town is the proportion of the cost of expansion borne by those using the airport and that borne by the Town itself. Airports usually finance airport maintenance through fees levied on airlines using the facility (e.g., Boston's Logan Airport finances maintenance and construction projects through MassPort and subsidizes related operations like the Conley Terminal and two nearby regional airports). It is unclear why the Town and its residents, not airport users, should cross-subsidize the proposed expansion. Moreover, the reason for expansion implies use by larger aircraft. **RK 01** **RK 02**

To justify the expansion, the Airport Commission should have completed a cost-benefit analysis similar to that required under the FCC AIP. There appear to be three potential reasons: first, to accommodate larger planes, given current demand; second, to accommodate increased expected demand due to local air traffic (i.e., with a destination of Barnstable or Nantucket); or third, to accommodate larger planes in order for the Airport to assume a larger role in serving neighboring areas as a 'micro-hub'. **RK 03**

The CAB deregulated interstate rates in 1978 under assuming that reasonable free entry and exit for carriers would create competition and market-based prices on most routes. (An economist, William Baumol, developed a debatable concept which he called "hit and run" which claimed that these conditions of free entry and exit would enable carriers to contest above market rents.) Several major airlines faced increasing economic distress after deregulation, causing some to enter bankruptcy and most to lower costs often by weakening unions. (Rates declined by about 2% annually from 1980 through 2000).[1] Following this rate deregulation, there have been two major innovations, yield management to price discriminate among passengers and expansion of regional hubs. On the demand side, yield management has become a complex strategy which has engaged in largely time-based price discrimination (e.g., early buyers, particularly economy passengers, receive discounts) and created greater demand response.[2] On the supply side, the expansion of regional hubs has achieved greater airline operational efficiency and lowered prices when there is competition at the hub.[3] These hubs have supported innovation in aircraft design initially emphasizing smaller planes to serve these regional markets. [4] Federal rate deregulation did not initially extend to gate allocation which allows airlines to exercise local market power, but there is some recent movement toward opening allocation at some major airports. [5] An older study shows cost convergence between legacy and newer entrants. [6] [7]

With respect to the first issue, the reported current annual traffic is reported at about 30,000 passengers (apparently round trips). The estimate of the expansion apparently exceeds $40 million dollars which if financed over 20 years implies an annual cost well above $2 million per year (with financing) which given current usage of about 30,000 (round-trip) passengers implies a round-trip charge of in excess of $60, which is a large share of current (economy) ticket price of about $400 from Boston. (In apparently the

only study, unit costs (from 1995-2005) of a 100 mile flight are less than $100; most underlying costs have risen but probably not by 100%.) In general, near term (one week out) short-haul economy reservations between Boston and near regional airports range from about $200 (Augusta and Buffalo), $300 (Burlington), $400 (Portland) and $500 (Albany) and surprisingly $500 (Providence), showing that seat-mile costs are not a clear guide to the difference in ticket prices. If usage remained constant, a 75 to 90 seat plane implies between two to three landings daily depending on load factor; a larger plane allows expansion (or more likely introduction) of first-class seating at a higher price reflecting greater comfort. Such first-class seating should attract wealthier summer visitors who likely already have on-Cape transport at their houses. If such first-class service is the main factor behind the expansion, then its cost can be more efficiently borne by usage charges imposed primarily on such wealthy passengers.

With respect to the second issue of increased traffic to local destinations (i.e., the Cape and Nantucket) independent of the relative price effect, the source of the increased demand is unclear. There seem to be two potential sources: first, the offer of first class seating in a larger plane; and second, the expansion of existing on-Cape resorts or building of new resorts. Are Cape planners working with local business to develop a plan for new, large high-end beach front facilities whose amenities attract more first-class airline passengers? Certainly, expansion of more modest facilities will not necessarily increase air traffic given inter-modal competition with cars, particularly when most tourists need a car after arriving on Cape. The apparent absence of the expansion of the Sagamore Bridge from Federal infra-structure legislation does imply that car traffic and bridge wait times will increase which will favor air traffic. However, if the Airport Commission supports the runway expansion to accommodate such increased demand, how does the Commission serve interests of year-round residents, particularly those under flight paths? Instead, if possible, the Commission should consider serving such interests by directly limiting landings or indirectly limiting by, for example, imposing an annual charge to recover expansion costs from all potential carriers, which while inefficiently discouraging entry serves the (equity) interests of year-round residents.

RK 04

RK 05

With respect to the third issue, changing the size and scope of the airport from one primarily serving the local market (i.e., the Cape and Nantucket) to one becoming a 'micro hub' which serves communities of the neighboring southern New England coast, this expansion could be driven primarily by the objectives of the current major air traffic provider on the Cape (i.e., Cape Air) to build a bigger business, but is this business objective one which necessarily serves the interest of a majority of year-round Town residents?.

RK 06

To summarize, the Town should have completed a cost-benefit analysis of the proposed expansion. If actual airport usage falls below expected and actual revenue then falls below expected, it is unclear how the Town will finance such under-collection: can the Town effectively raise fees for subsequent years or will the Town finance such under-collection from the Town's general funds? Moreover, potential bond buyers will understand this demand uncertainty which will raise the interest rate on a bond issue.

Sincerely,

Robert Berry
Kathleen Benson
PO Box 335; Barnstable, MA. 02630
508 362 3419

[1] "Airline regulators attempted to assure a stable, growing industry that benefited consumers and the economy. The result was relatively high fares, inefficient operations, and airline earnings volatility." They conclude "The average returns that the airlines have earned since deregulation would be insufficient to sustain the industry prospectively, although this conclusion might have been different in the late 1990s. That does not imply that competition in the industry is inherently unsustainable. The natural volatility in the demand for air travel probably will always cause earnings to be less stable than in other industries, but other factors that have depressed earnings are potentially controllable. Slow adjustment of labor costs is an institutional feature of the industry that may change either through new labor agreements at legacy carriers or through shift in market share to airlines that can adjust more nimbly. Much of the instability since deregulation has resulted from experimentation with flight scheduling, pricing, loyalty programs, distribution systems, and organization forms." P. 129 Severin Borenstein and Nancy L. Rose, "How Airline Markets Work…or Do They? Regulatory Reform in the Airline Industry" : *Economic Regulation and Its Reform: What Have We Learned*? 2014.

[2] "Computerized reservation systems were developed in the 1950s to keep track of airline seat booking and fare information. Initially these were internal systems but were soon made available to travel agents. Deregulation of airline pricing in 1978 permitted much more extensive use of the systems for economic activity, especially pricing." p. 2 R. Preston McAfee and Vera de Velde, "Dynamic Pricing in the Airline Industry" "This paper analyzes the effects of market structure on price dispersion in the airline industry, using panel data from 1993 through 2006. The results found in this paper contrast with those of Borenstein and Rose (1994), who found that price dispersion increases with competition. We find that competition has a negative effect on price dispersion, in line with the traditional textbook treatment of price discrimination. Specifically, the effects of competition on price dispersion are most significant on routes that we identify as having consumers characterized by relatively heterogeneous elasticities of demand. On routes with a more homogeneous customer base, the effects of competition on price discrimination are largely insignificant. We conclude from these results that competition acts to erode the ability of a carrier to price discriminate, resulting in reduced overall price dispersion." Gerardi and Shapiro, "Does Competition Reduce Price Discrimination? New Evidence from the Airline Industry?" Working Paper Boston Federal Reserve 2007.

[3] "This research develops a city-pair air demand model…" "The empirical analysis also suggests that (1) air fare is endogenous and correcting the endogeneity problem by the IV (instrumental variable) method significantly improves the fare coefficient and its implications; (2) the minimum frequency is more critical to the connecting service; (3) the inferred values of scheduled flight time are $16.6/h for direct routes and $24.1/h for connecting routes, both in 2004 dollars; (4) when choosing among connecting routes, travelers avoid connecting at airports with high expected delay; (5) under steady state a 1-min hub delay increase has a larger impact on demand than an equivalent change in scheduled flight time of a connecting route; (6) there is a concave relationship between market distance and air route demand; (7) in a longer-haul market route attribute changes are more likely to shift traffic between routes as opposed to affecting total air market traffic". Hsiao and Hansen "A passenger demand model for air transportation in a hub-and-spoke network," *Transportation Research Part E.* p. 1123
"The U.S. airline industry went through tremendous turmoil in the early 2000's. There were four major bankruptcies and two major mergers, with all legacy carriers reporting a large profit reduction. This paper presents a structural model of the airline industry and estimates the impact of demand and supply changes on profitability. We find that, compared with the late 1990s, in 2006, a) air-travel demand was 8% more price sensitive; b) passengers displayed a strong preference for direct flights, and the connection semi-elasticity was 17% higher; c) the changes of marginal cost significantly favored direct flights. These findings are present in all the specifications we estimated. Together with the expansion of low cost carriers, they explained more than 80% of the decrease in legacy carriers' variable profits." Steven Berry and Panle Jia, "Tracing the Woes: An empirical analysis of the airline industry," NBER 2008,

[4] A somewhat older study using more comprehensive econometric model concludes: "While there are clearly opportunities to reduce operating cost by upsizing the fleet, aircraft operating cost scale economies are not particularly strong nor do they extend, for most US domestic stages, very far. Moreover, there are effectively diseconomies of scale in purchase price. Part of the explanation for these results is technical and related to diseconomies of scale associated with terminal costs. But institutional factors. In particular the incorporation of aircraft size in flight crew pay scales, and the bundling of aircraft size and range weaken the cost advantages of fleet

upsizing still further. In effect, airlines are forced to share the inherent productivity advantages of large planes with labor, while retaining exclusive authority on what models to buy. Such an arrangement results in decisions to buy smaller planes than would be suggested by technical efficiency criteria alone" *Cost Economics of Aircraft Size* Wei and Hansen *Journal of Transport Economics and Policy*, Vol. 37, No. 2 (May, 2003), pp. 279-296.

[5] "We find that the hub premium is increasing in the ticket fare. We find that control of gates is a crucial determinant of this premium. Limits on the fees that airlines can charge for subleasing their gates lower the prices charged by airlines. Finally, control of gates and restrictions on sublease fees explain high fares only when there is a scarcity of gates relative to the number of departures from an airport." p.467 "In this paper, we show that airlines can still charge a large premium in markets into and out of their hubs. In particular, we find that the hub premium is influenced by gate ownership, particularly when gate utilization is high at an airport, and that the hub premium is larger at the high end of the fare distribution. Future research should focus on the role that barriers to entry have on the entry decisions, because that is also an important determinant of long-run competition in airline markets." Finally, we want to highlight that our research can explain approximately 50 percent of the hub premium. The other 50 percent is still to be explained. It could be a function of what Borenstein (1989) calls marketing barriers to entry: frequent-flyer programs and volume incentives to travel agents that might allow airlines to raise their prices above their marginal cost. Unfortunately, data on frequent-flyer programs are not available. The remainder of the premium may also be explained as a function of the strategic behavior of airlines." P. 490 Federico Ciliberto and Jonathan W. Williams," Limited Access to Airport Facilities and Market Power in the Airline Industry," *Journal of Law and Economics* 2010,

[6] Gerassimos Tsoukalas, "Cost Convergence in the US Airline Industry: An Analysis of Unit Costs 1995–2006 *Journal of Air Transport Management* 2006 shows comparable unit costs of about $.10 per mile.

[7] Regional airlines have recently moved from smaller planes with 50 or fewer seats and toward larger planes like the Bombardier CRJ900 with 90 seats (takeoff of about 6000 feet) and the Embraer E175 with 76 seats (takeoff of about 7300 feet); while posted prices are poor guides, the CRJ900 lists above $40 million and the Embraer lists above $30 million with comparable fuel efficiency of about 600 gallons per hour. Some of these regional aircraft are modified for first class with off-center aisles.

View Comment

Comment Details

EEA #/MEPA ID	First Name	Address Line 1	Organization
16640	Susan	--	--
Comments Submit Date	**Last Name**	**Address Line 2**	**Affiliation Description**
1-12-2023	Ascher	--	--
Certificate Action Date	**Phone**	**State**	**Status**
1-12-2023	--	MASSACHUSETTS	Opened
Reviewer	**Email**	**Zip Code**	
Purvi Patel, (617)874-0668, purvi.patel@mass.gov	suza100@hotmail.com	02632	

Comment Title or Subject

Topic: Cape Cod Gateway Airport

Comments

I am opposed to the expansion of Cape Cod Gateway Airport for the following reason:

Cape Cod has a fragile ecosystem which has been stretched beyond the limit due to the influx of both visitors and new residents. An expanded airport would cause further damage by:

1. ***Pollution, both air and noise.*** The beaches are visibly dirtier and more polluted since Jet Blue began flying into Cape Cod. More aircraft, both large and small, would **greatly** compound the problem. Who wants dirty beaches and polluted air, not only on the beaches but throughout the Cape? The **constant** noise of aircraft over our houses and beaches is extremely annoying, starting at 6 am and continuing until late at night (I have heard planes after 10 pm - and do not live particularly close to the airport). This has a large impact on the **quality of life** for Cape residents. **SA 01**
2. ***Too many people.*** The Cape has a fragile ecosystem which had already been stretched to the limit even before the COVID related influx of visitors and new inhabitants. The water system, for example, simply cannot handle any more. Clearcuttng the trees to allow for a larger airport will substantially **add to the pollution** and destruction of this beautiful, fragile ecosystem.We need trees, not asphalt! As for the usual 'business' reasons, there are already long waiting lines at most restaurants all summer long and plenty of 'no vacancy' signs. **SA 02**
3. ***Infrastructure/Traffic issues:*** These have. become much worse the past 3 years, Cape roads cannot handle more cars. And the land cannot handle more/bigger roads. We are sitting on a water table and sand. **SA 03**

Clearly the airport needs repairs (NOT longer runways for larger aircraft or airport expansion).It is **irresponsible and short-sighted** to cater to business interests, especially those of large airlines, and disregard the damage to environment, reducing the quality of life for Cape residents with worsening air pollution, noise pollution, dirtier land (including beaches), straining infrastructure issues, causing traffic problems and other overpopulation issues.**We do not need a larger airport!**

Susan Ascher

Attachments

Update Status

Status

Accepted

SUBMIT

Share Comment

SHARE WITH A REGISTERED USER

BACK TO SEARCH RESULTS

View Comment

Comment Details

EEA #/MEPA ID	First Name	Address Line 1	Organization
16640	susan	--	--
Comments Submit Date	**Last Name**	**Address Line 2**	**Affiliation Description**
1-12-2023	brita	--	--
Certificate Action Date	**Phone**	**State**	**Status**
1-12-2023	--	--	Opened
Reviewer	**Email**	**Zip Code**	
Purvi Patel, (617)874-0668, purvi.patel@mass.gov	sfbrita@gmail.com	--	

Comment Title or Subject

Topic: noise and visual pollution

Comments

Segoe UI | 10 pt | Paragraph

Similar to so many Cape Cod residents, I retired to the Cape to enjoy not only its unmatched scenic beauty but also the inherent tranquility that comes with quiet skies, and bucolic scenery. All of that is under assault with the Hyannis airport expansion project - EEA#16640. Larger jets and more frequent jet service, flying hourly over Lewis Bay, transforms Lewis Bay into Jamaica Bay, home of LaGuardia Airport. Noise and visual pollution are products of this project. **SB 01**

The FAA did not adequately study the use of Otis Airforce Base as an alternative to expanding Hyannis. A transportation hub at Otis could have combined air, rail, water and other public transport modes at a point on the Cape where it made the most sense - before traffic gets deeply into the cape. Although the military does not like to "share" airports with civilian aircraft, Otis is large enough that separation could have been achieved. This project is great example of COVID stimulus money chasing a project. **SB 02**

Time to take a step back and really examine if this project is really needed.

Susan Brita

West Yarmouth

Attachments

Update Status

Status

Accepted

SUBMIT

Share Comment

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BACK TO SEARCH RESULTS

Patel, Purvi (EEA)

From: karen ingemie <kareningemie@comcast.net>
Sent: Friday, January 13, 2023 12:11 AM
To: Patel, Purvi (EEA)
Subject: MEPA PUBLIC COMMENTS - CAPE COD GATEWAY AIRPORT
Attachments: IMG_0600.MOV; FullSizeRender.MOV

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Att: MEPA Representative Purvi Patel

I am writing this in regards to the Cape Cod Gateway Environmental Assessment meeting held on Thursday, January 5, 2023 reviewing the expansion of the airport which I am strongly opposed to.

After attending multiple meetings on the Cape Cod Gateway Airports Master Plan expansion they all end up representing what the airport wants "growth" with little to no regard to residents. Others including myself have contacted the airport complaining about the increase of aircraft, noise, pilots not using the designated flight paths on the website and the flight tracking systems showing incorrect data. Many of us have given up because we are considered complainers and simply ignored.

No home owner living in a residential area should have to tolerate or have to live with the constant flow of noise and pollution from aircraft flying every 2 to 5 minutes, some flying as low as 225' – 325' over our homes with decibel readings between 70.6 and 99.3. The frequency and noise level are beyond words and the FAA's current metric for quantifying noise exposure does not adequately capture the effects of aircraft noise on the lives of affected residents, their families or the current health issues associated with jet emissions and noise pollution. A 2014 study showed that chronic exposure to noise for 8 hours can cause permanent hearing changes in children. **KI 01**

I handed Purvi Patel after the Environmental Assessment Meeting at the Airport, January 6th a USB drive showing multiple videos of planes flying over this area. On August 20, 2020 I recorded 28 planes flying between 1:28pm – 6:03pm. These videos show the actual path of aircraft and the flight track data I collected shows the airport flight tracking system is incorrect showing the wrong flight path. **KI 02**

Noise, Air and water pollution is an invisible threat. We have been exposed to unhealthy levels of air pollution and aircraft noise from aircraft flying over this area and not flying the flight paths designated on the airport website. PFAS has also become a concern since Cape Cod Gateway Airport shares the Lewis Bay Watershed and a study conducted shows Mill Creek is contaminated by PFAS. Not only does this concentration of aircraft threaten the health and wellbeing of American citizens but I believe our fundamental right to a quality of life has been violated. **KI 03**

What impact is aircraft traffic having on our health, our environment, who will be held accountable for the health and the wellbeing of families and wildlife affected by Air emissions pollution, water and noise pollution?

Exposure to loud noise over 70 decibels can cause hearing loss, high blood pressure, sleep disturbance and stress to all age groups. I now have high blood pressure and my husband is on anxiety medication and cannot sit outside without covering his ears because of the high pitch sound of jets and ringing in his ears.
Children are particularly vulnerable to noise-induced hearing loss. A study found that chronic exposure to noise for 8 hours a day could cause permanent hearing changes in children, including the inability to hear certain frequency. Also living near noisy airports have been found to suffer from stress, memory impairment, attention level and poor reading skills.
Exposure to Air pollution contributes to a variety of health issues. The effects of air pollution on a person's health can range from mild breathing difficulties to severe cardiovascular issues, including heart disease and stroke.
Data collected from articles below:
(National Geopgraphic.org/encyclopedia/noise-pollution/)
(Medical News Today: Noise Pollution health effects: Impact on mental and physical health. Medically reviewed by Meredith Goodwin, MD, FAAFP) (Medical News Today: Air Pollutants: How they effect our health. Medically reviewed by Alane Biggers, MD, MPH)

Were any health impact assessments done or environmental studies conducted in our area regarding flight patterns, frequency of traffic, effects of jet emissions, the risk factor of low altitudes aircraft flying over our homes and the decibel levels? Studies should be conducted to measure the health consequences of exposure to aviation noise, aircraft exhaust gases and exposure of PFAS and flight paths so families can have their quality of life back? **KI 04**

I oppose any expansion of runway 15-33 at the airport that would increase air traffic and the health of myself and family. The Master Plan has been wrong from the get-go, the airport was never intended for commercial or corporate jets arriving and departing in the middle of a residential, hospital and retail area sometimes starting at 5 AM continuing through the day until after midnight.

The impact of increase aircraft air and noise pollution on affected residential areas should be given strong consideration when MEPA assesses the proposed airport expansion and flight paths pilots use flying over residential areas. Consideration should also be given to moving the airport to Otis AFB where the impact on the environment and residential quality of life would be less. Here are 2 more videos of what we deal with between 6AM continuing throughout the day until 10PM. Occasionally planes fly over at 5AM, 10PM and after midnight. **KI 05**

Regards
Karen Ingemie
West Yarmouth

AIR TRAFFIC VIDEOS 52 MB		
DATE	**Time**	
6-Aug	2:59	3:43
8-Aug	2:26	2:29
14-Aug	3:16	
	4:06	
	4:15	
	6:08	
20-Aug	1:28	
	1:57	
	2:03	
	2:05	
	2:09	
	2:15	
	2:16	
	2:20	
	2:24	
	2:25	
	2:27	
	2:35	
	2:40	
	2:54	
	3:02	
	3:06	
	3:09	
	3:17	
	3:25	
	3:51	
	4:00	
	4:05	
	4:28	
	4:31	
	4:36	
	4:43	
	6:03	
30-Aug	3:37	3:59
31-Aug	5:21	
3-Oct	4:49	

Photos are labeled by date/time/year
Aug625920 = Aug 6 / 2:59 / 20

To the Yarmouth BOS:

August 20th, an afternoon on my deck.

With the information provided, *I hope you all have a better understanding and* **clearer picture of what residents in Yarmouth are dealing with.**

Thank you all for taking the time to review these videos.

Regards

Karen Ingemie

82 Cleveland Way

West Yarmouth, Ma

Hyannis Park Area

Patel, Purvi (EEA)

From: gdoblebh@gmail.com
Sent: Saturday, January 14, 2023 9:00 AM
To: karen ingemie; Patel, Purvi (EEA)
Cc: Darlene; badrigian@msn.com; linda Bolliger
Subject: Re: MEPA COMMENTS - Due today

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Purvi,
Please see the following messages. This should be forwarded to Bill Keating(I tried to find his email but was unsuccessful).
Thank you for your efforts with this most important issue.
George Doble
West Yarmouth

Sent from my iPhone

On Jan 12, 2023, at 5:31 PM, karen ingemie <kareningemie@comcast.net> wrote:

Hello Brian and George,

Thank you for your comments and interest in helping to support opposition to runway 15-33 expansion at the Cape Cod Gateway Airport. I have copied the President of Hyannis Park Civic Association, Linda Bolinger, she has done an amazing job representing the residents of Hyannis Park working environmental concerns and other issues. If you have any questions, or would like more detailed information regarding the airport please contact her.

Her email is linda.bolliger0@gmail.com

Sorry for the delay in sending the MEPA Slide Presentation to Darlene but as usual the airport did not post the presentation till yesterday. Public meetings aren't communicated very well and they always seem to schedule them when summer residents aren't here.

After the meeting last Thursday it was evident that the the airport plans on increasing aircraft traffic with larger commercial and corporate jets flying over a larger area in Yarmouth. The (MEPA) Representative, Purvi Patel, had asked us to send our concerns/comments regarding the environmental and pollution issues (Air, Noise and PFAS contamination) impacting us from the airport.

If you could sent your comments directly to purvi.patel@state.ma.us with concerns you have with the airport and why you are opposed to expansion it would be greatly appreciated since the more concerned residents we have other than Hyannis Park who are deemed as complainers might get their attention. Comments are due today, I apologize for such short notice.

Residents living near the airport and surrounding areas have been exposed to unhealthy levels of noise, air emissions and PFAS contimination and our complaints have been simply ignored by the airport. I think getting the Associations to work together would be beneficial to all of the residents living in this area. Maybe a zoom meeting to introduce ourselves and have a discussion around how all the associations can make a stand against Cape Cod Gateway Airport.

GD 01

Thanks
Karen

From: Darlene Richard <d19richard@gmail.com>
Subject: Fwd: MEPA Slide Presentation - comments input needed by January 12th
Date: January 12, 2023 at 12:01:16 PM EST
To: karen ingemie <kareningemie@comcast.net>

Begin forwarded message:

> **From:** Brian Badrigian <badrigian@msn.com>
> **Date:** January 11, 2023 at 8:40:55 PM EST
> **To:** Darlene Richard <d19richard@gmail.com>
> **Cc:** george doble <gdoblebh@gmail.com>
> **Subject: Re: MEPA Slide Presentation - comments input needed by January 12th**
>
> Darlene,
> Thank you for sending this information.
> Not sure I understand this correctly and please correct me if I'm wrong but it seems that there was a hearing about expanding the airport for landing larger planes and that the hearing was not widely publicized and the hearing did not discuss issues and concerns that would be important to area properly owners. Since this is an issue that effects many locations it might be more vocal if the various associations in the effected area come together on this matter; I suggest that GIOC, Great Island, Hyannis Park and as many other associations as possible get together and talk about this (there is usually strength in numbers). There is no need to limit the associations to just the West Yarmouth area but instead open up the discussion to as many participants

GD 02

as possible. Then involve the state reps and senators, who work for the residents and property owners. This might, after some discussion, be best handled by an attorney to put the objections on the record with the MEPA and prevent anymore hearings from taking place without sufficient prior notice. It would make sense that the various associations contribute to the cost of the attorney. It seems landing larger jets would only benefit a very small number of people and would create a serious detriment to the residents and tax paying property owners. Personally I believe the residents and property owners own the towns and therefore should write the rules for what is allowed.

Let me know if I my understanding is incorrect.

Thanks and stay well.

Brian

Begin forwarded message:

From: gdoblebh@gmail.com
Date: January 12, 2023 at 9:49:56 AM EST
To: Brian Badrigian <badrigian@msn.com>
Cc: Darlene Richard <d19richard@gmail.com>
Subject: Re: MEPA Slide Presentation - comments input needed by January 12th

Good morning,
Not much more I can add to Brian's reply, except that:
1. I would not have been aware of this had I not received these emails-thank you. I would have attended this meeting IN PERSON to voice my objections.
2. Expanding the airport for the benefit of a few to the detriment of most homeowners/taxpayers is unconscionable. I can't imagine those taxpayers who live closer to the airport to have to deal with this potential increase noise & risk. Yes, they purchased their homes knowing the closeness to the airport but to expand it to accommodate even larger aircraft should not be allowed. As one exits route 6 at exit 7, driving to gioc, when current aircraft are making their approach, it almost seems one can reach out and touch the aircraft-I would not like to see any larger aircraft using this airport.
3. The email is asking for comments to be sent to purvi.Patel, shouldn't these comments be sent to Bill Keating, our state rep. I can forward this to him if you are ok with that. Just let me know. I'm not sure who Purvi Patel is in this notice.
Thanks
George

GD 03

Appendix B

2022 Cape Cod Gateway Airport Master Plan (Chapters 4 to 6)

Cape Cod Gateway Airport

Airport Master Plan
Final Report

McFarland Johnson

Cape Cod Gateway Airport

Airport Master Plan

Forecasts

McFarland Johnson

4. Forecasts

4.1. INTRODUCTION

The purpose of aviation forecasting is to outline future growth of significant areas of activity over a 20-year period at the Cape Cod Gateway Airport (HYA or the Airport). The Federal Aviation Administration (FAA) requires that all airport planning efforts be based upon an approved forecast methodology as the resulting analysis assists in determining the facility requirements for meeting future demand.

The key elements of this chapter include:

- Airport Catchment/Service Areas
- Forecast Influencing Factors
- Socioeconomic Data
- Commercial Passenger Enplanements
- Aircraft Operations
- Based Aircraft
- Itinerant General Aviation Passengers
- Annual Instrument Operations
- Forecast Summary
- Existing and Future Design Aircraft

Key metrics of the aviation forecasts and their focus at the Airport include the following:

Annual Commercial Passenger Enplanements: The number of people boarding commercial aircraft at the Airport each year, which is used to identify the need for future passenger terminal area space, parking facilities, and airport access. In the dynamic commercial aviation industry, forecasting passenger enplanements requires a broad view of trends and influencing factors as opposed to looking at past relationships through regression analysis. These growth-influencing factors range from socioeconomic patterns to air service analyses.

Aircraft Operations: The number of takeoffs and landings at the Airport each year, which is used to determine the necessary capacity of the airfield and aircraft operating areas. A takeoff and landing are each counted individually as one operation.

Based Aircraft by Type: The number and type of general aviation (GA) and Cape Air aircraft maintained at the airport on a permanent basis (including remain overnight (RON)), which is used to identify the space requirements of future facilities.

General Aviation Passengers: The estimated number of non-pilots utilizing GA facilities.

Annual Instrument Approaches: The estimated number of traffic counts that fly under Instrument Flight Rules (IFR) and are captured by FAA enroute computers.

At the time of this forecast effort (Spring 2020), there is a great deal of short-term uncertainty and volatility in demand due to the impacts of the global Covid-19/Coronavirus crisis. The initial sharp reduction in demand and following economic ramifications may result in much lower demand in all aviation segments, especially those related to commercial aviation in the immediate short-term. Though the full impacts remain to be seen, the situation is currently being viewed as more of a temporary shock/interruption to the market as opposed to a shift in demand. The cardinal years of 5, 10, and 20 are still considered prudent for long-range planning purposes as the broader market is expected to ultimately emerge the same as it was prior to these events.

4.2. AIRPORT CATCHMENT/SERVICE AREAS

4.2.1. Commercial Service Catchment Area

Presently, nearly all of Cape Cod uses other off-Cape airports for their commercial service needs as a function of where those services are currently offered. These are primarily Boston's Logan and Providence's TF Green Airports. For the sake of this master plan, the potential commercial service market area for the Airport is defined as all of Cape Cod and towns that straddle the Cape Cod Canal. Towns that would normally be considered within a reasonable 60-minute drive of Hyannis that were off-cape, such as Plymouth, were excluded from the service area as those communities are ultimately closer to other commercial service options in Boston and Providence. This market area was used for a detailed analysis involving passenger booking data which, is discussed in the enplanements section. **Figure 4-1** displays the passenger service area for the Airport.

During the peak season, traffic across the Cape Cod Canal can be time-prohibitive for people from Plymouth County. However, a year-round, low-cost service should include Plymouth County in the catchment area.

4.2.2. General Aviation Service Areas

GA also plays a key role at the Airport. For purposes of GA, the area from which tenants/users are most likely to be located is referred to as a service area. For the Airport, there are two types of GA service areas: GA jet service and light GA service areas. When determining service areas, Martha's Vineyard and Nantucket (the Islands) were excluded.

GA jet service and light GA service areas are shown in **Figure 4-2** and **Figure 4-3**, respectively. The GA jet service area is defined as airports having at least one 5,000-foot paved runway at a public use GA airport. Within Barnstable County and south of the Cape Cod Canal, HYA is the only public use airport with at least one 5,000-foot paved runway to provide jet service. The Island Airports were excluded from this service area since most GA operations would fly directly to the Islands if that is their final destination.

Figure 4-1: Commercial Service - Service Area

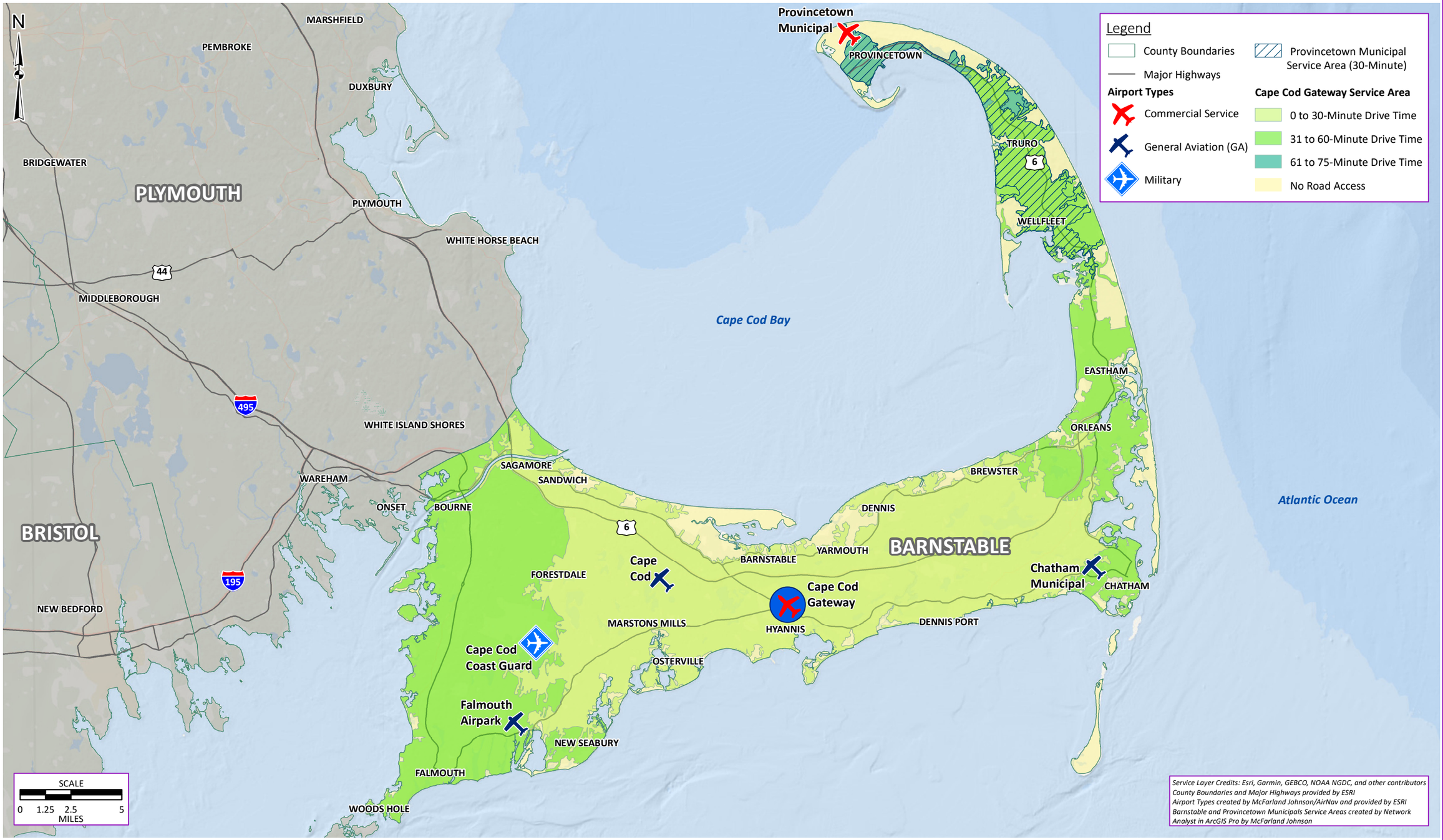

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Figure 4-2: GA Jet - Service Area

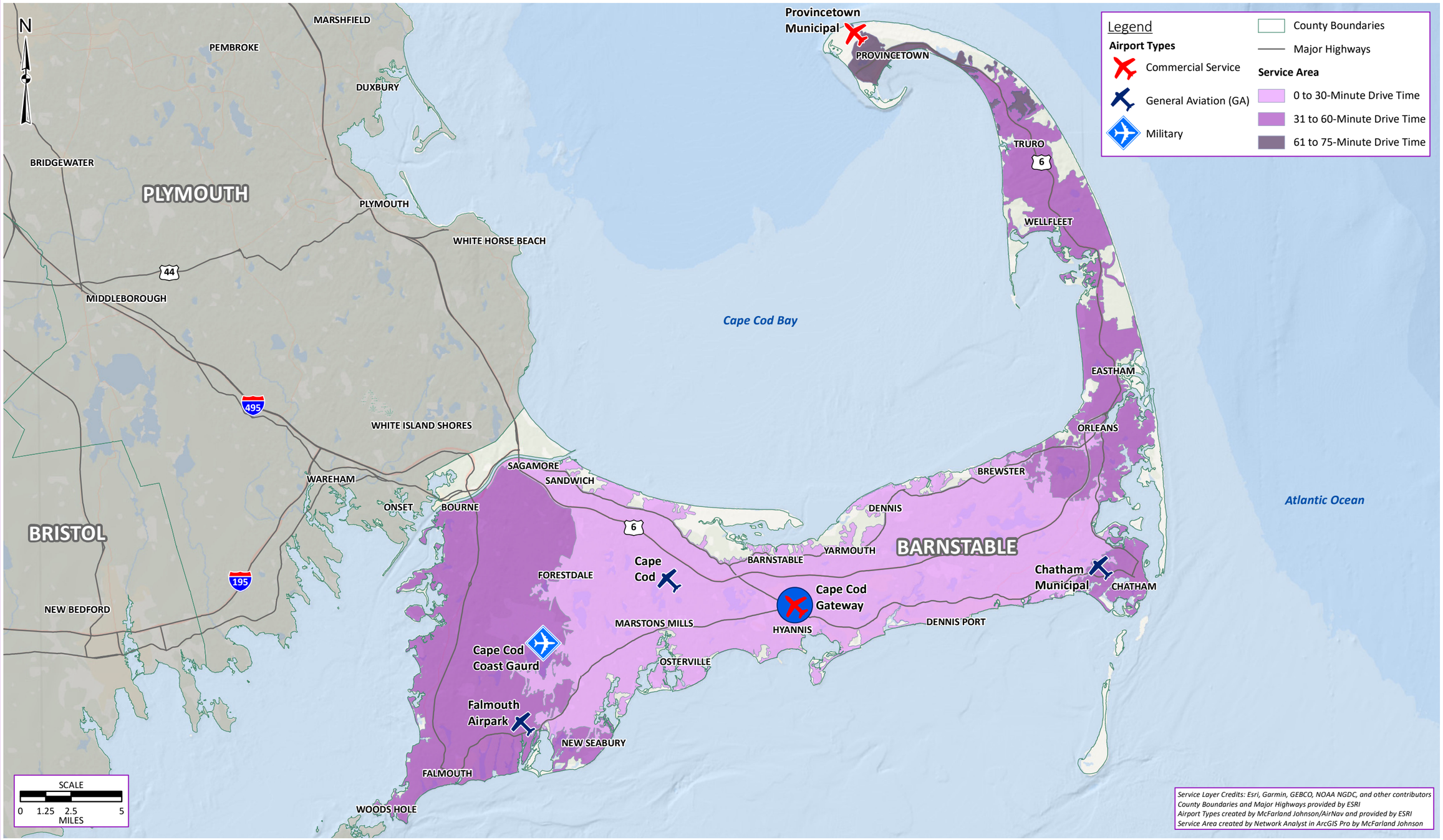

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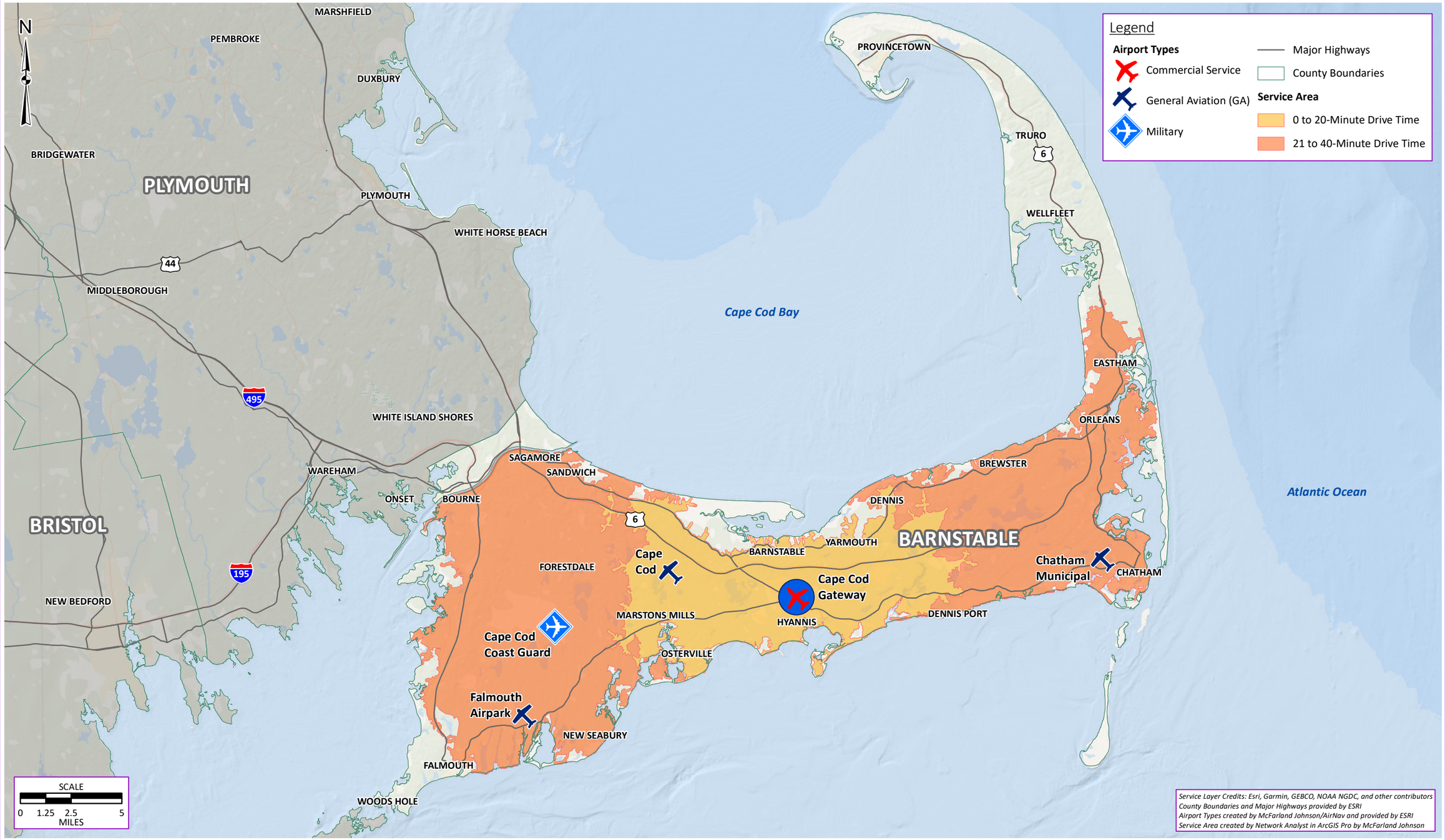
Figure 4-3: Light GA - Service Area



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The light GA service area was defined as public use GA airports within a 40-minute drive and south of the Cape Cod Canal. There are four public use GA airports within the light GA service area. These airports are: HYA, Cape Cod Airfield (2B1), Falmouth Airpark (5B6), and Chatham Municipal Airport (CQX). Of these airports, only 2B1 is located within a 20-minute drive time. However, 2B1 does not have a paved runway.

4.3. FORECAST INFLUENCING FACTORS

Airline and Hub Consolidation – In the early to mid-2000's, there were close to a dozen major network airlines such as Air Tran, America West, Continental, Northwest, TWA, and US Airways all of whom have since merged or have been acquired by other airlines. These actions have also limited hub choice as airlines closed hubs such as Pittsburgh (US Airways), Cincinnati (Delta), Cleveland (Continental), and Memphis (Northwest). While consolidation among the major network carriers (American, Delta, Southwest, and United) is unlikely, some consolidation cannot be ruled out for the next size-tier of airlines such as Alaska, Frontier, JetBlue, or Spirit. Despite how the airlines sell the merger to regulatory agencies in the approval process, mergers and acquisitions typically result in reduced options and higher fares for the consumer in the long run. For airports this can result in a surplus of facilities such as ticket counters, baggage offices, and sometimes even gates.

Low Cost Airline Growth – Low cost and less than daily service has been introduced at dozens of small-hub and non-hub airports throughout the U.S. The number of airports with low fare service had increased steadily over time with nearly every airport small-hub and larger boasting some type of low-fare service, with an increasing number of non-hub airports joining that list. This service is often seasonal and less-than daily allowing airlines to better match service levels to the limited demand of these small markets.

Aircraft Up-Gauging – Industry wide, and especially at small and medium sized airports, regional jets and turboprops with 50 seats or less are being consolidated into larger regional aircraft. In most cases, these larger aircraft come at the expense of frequency. This is further emphasized by the fact that there are no aircraft being produced or in development for the more than 9 to 66 seat segments aside from the ATR-42, which only has one operator in the U.S. (Silver Airways). The last 50-seat regional jet was delivered to a U.S. regional in 2005, meaning they will likely all be retired within the 20-year planning horizon.

This trend was included as a highlight in the FAA's Aerospace Forecast for 2019-2039, which notes "US carrier system capacity measure in available seat miles is forecast to grow in line with the increases in demand. The number of seats per aircraft is getting bigger, especially in the regional jet market, where we expect the number of 50 seat regional jets to fall to just a handful by 2030, replaced by 70-90 seat aircraft."

Pilot Supply – In recent years, the industry has begun to see impacts associated with a reduced number of pilots entering the aviation industry. Reduced pay, with the onset of regional jet flying in the 2000's, and regulatory changes requiring 1,500 hours for first officers, have added to an already increasingly expensive training process. These are compounding factors that will likely increase the severity of this issue in the coming years. Some industry groups also predict a similar shortage in qualified aircraft mechanics. Limited pilot supply is a contributing factor to the recent aircraft up-gauging trend. The pilot shortage is not unique to HYA. However, Cape Air acts as an

entry level position for new pilots. With Cape Air being based at the Airport, this situation could present additional business opportunities.

NextGen – For the past 10 years, the FAA has been incrementally implementing new technology with the broader goal of modernizing the nation's air traffic control system. Some of the key objectives involve improving the safety and efficiency of airspace in and around high-volume airport regions such as Atlanta, New York, and Washington. These improvements may not have a noticeable impact on airport's operational efficiency; however, it may reduce delays to hub airports and provide the opportunity for additional schedule frequencies resulting in an improved passenger experience.

Fuel Prices – Over the past 10 years, the aviation industry has demonstrated its sensitivity to fuel prices and their impact on operational cost and ultimately aviation demand. On average, fuel represents approximately one-third of the cost of commercial aviation activity. Thus, during spikes in fuel prices like in 2008, the impacts to both supply and demand are tremendous. Advancements in fuel technology will help reduce industry sensitivity to fuel although it will likely continue to be a key influencer for activity for some time.

Electric Aircraft - To counter the high cost and uncertainty associated with fuel, several aircraft manufacturers have begun investing in the development of all-electric aircraft. The prospects that are furthest along in the development phase are predominantly those 9-seats and smaller. Cape Air is hoping to be a pioneer by having ordered aircraft for their fleet. There are significant regulatory hurdles to overcome before these aircraft can enter revenue service or even be utilized privately on a wide scale; however, this could potentially have notable implications on demand. Key considerations associated with the development of electric aircraft include the provision of the necessary facilities for charging and the loss of fuel sales, flowage fees and tax revenue that funds airport infrastructure.

Aircraft Technology – Over the past 20 years there have been significant advances and innovations to aviation and aircraft technology. With global positioning system (GPS) technology, unmanned aerial systems (UAS), and single pilot operations for complex aircraft systems, the next 20 years will likely yield numerous additional advances in technology that could impact various airline business models. Monitoring and maintaining an awareness of technology enhancements and potential applications will help ensure the Airport is always well-positioned to respond to a changing industry.

4.4. SOCIOECONOMIC DATA

To understand the socioeconomic atmosphere surrounding the Airport, data was collected and placed in multiple tables below. These tables provide a comparison between the United States, the Commonwealth of Massachusetts, Dukes County, Nantucket County, Barnstable County, and surrounding towns that comprise the local area.

The total percent change in population from 2000 to 2018, shows that the Barnstable vicinity, with the exception of Dukes and Nantucket Counties, has experienced a steady decline in population, while the U.S. and the Commonwealth of Massachusetts have seen increases in population. Barnstable County, the Town of Barnstable, the Town of Yarmouth, and the Town of Falmouth

have seen declines in population. Dukes and Nantucket Counties as well as the Town of Sandwich show population increases in the past 18 years. These numbers are shown in **Table 4-1**.

Table 4-1: Population Change 2000-2018

Area	2000 Population	2010 Population	2018 Population (Estimate)	Total % Population Change (2000-2018)
United States	281,421,906	308,745,538	327,167,434	+16.26%
Commonwealth of Massachusetts	6,349,097	6,547,629	6,902,149	+8.71%
Dukes County	14,836	16,155	17,313	+16.70%
Dukes County Seasonal Increase[1]	N/A	N/A	200,000	N/A
Nantucket County	9,210	10,069	11,101	+20.53%
Nantucket County Seasonal Increase[2]	N/A	N/A	60,000	N/A
Barnstable County	222,230	215,888	213,413	-3.97%
Barnstable County Seasonal Increase[3]	N/A	N/A	430,000	N/A
Town of Barnstable	47,821	45,193	44,460	-5.5%
Town of Yarmouth	24,807	23,793	23,459*	-5.43%
Town of Sandwich	20,136	20,675	20,416*	+1.39%
Town of Falmouth	32,660	31,531	31,254*	-4.30%

Notes: * 2017 Data Utilized; N/A – not available

Sources: U.S. Census Bureau, American Fact Finder 2019; [1]https://www.mvy.com/island-information.html; retrieved November 14, 2019; [2]https://www.nantucket-ma.gov/31/Community; retrieved November 14, 2019; [3]https://www.jackconway.com/blog/whats-it-like-to-live-year-round-on-cape-cod/, retrieved April 16, 2020.

As the gateway to the Cape Cod Islands, the Airport is also influenced by the summertime population growth experienced on the Cape, Nantucket, and Martha's Vineyard. The year-round population of Cape Cod is 213,413[1], while Nantucket[2] and Martha's Vineyard[3] year-round populations are 10,000 and nearly 17,000 residents, respectively. During the summer months, July and August in particular, the population of the Cape more than doubles[4] while Nantucket balloons to between 50,000 and 60,000 residents and the population of Martha's Vineyard grows to as much as 200,000 residents.

[1] Estimated 2018 census data, U.S. Census Bureau, American Fact Finder, 2019.

[2] https://www.nantucket-ma.gov/31/Community; retrieved November 14, 2019.

[3] https://www.mvy.com/island-information.html; retrieved November 14, 2019.

[4] https://www.jackconway.com/blog/whats-it-like-to-live-year-round-on-cape-cod/, retrieved April 16, 2020.

The area surrounding Barnstable is rather homogenous. Nationally, there is a higher percentage of all minority populations than in Barnstable or surrounding towns. National, state, and local demographics are shown in Table 4-2.

Table 4-2: Racial and Ethnic Characteristics (2017 Data)

Area	White	Black or African American	Asian	Two or More Races	Hispanic/Latino
United States	61.5%	12.3%	5.3%	2.2%	17.6%
Commonwealth of Massachusetts	72.9%	6.7%	6.2%	2.1%	11.2%
Dukes County	88.5%	3.9%	0.4%	4.6%	3.5%
Nantucket County	87.7%	7.0%	1.0%	4.5%	3.5%
Barnstable County	90.2%	2.7%	1.5%	1.7%	2.7%
Town of Barnstable	87.7%	4.4%	0.6%	1.6%	4.2%
Town of Yarmouth	92.1%	1.9%	2.1%	1.8%	1.7%
Town of Sandwich	95.0%	0.0%	1.3%	0.5%	2.8%
Town of Falmouth	88.4%	3.5%	3.1%	2.9%	2.1%

Source: U.S. Census Bureau, American Fact Finder 2019.

Most municipalities that surround the Airport are below the state and national unemployment, as shown in Table 4-3. Barnstable County has a lower unemployment rate than the state, as do the Towns of Barnstable, Sandwich, and Falmouth. The Town of Yarmouth is the only town in the area with a slightly higher than national unemployment rate. Dukes and Barnstable Counties, along with the Towns of Barnstable and Yarmouth all have median household incomes lower than the state, but higher than the nation. Nantucket County as well as the Towns of Sandwich and Falmouth boast median household incomes significantly higher than both the state and the nation.

According to the 2017 American Community Survey provided by the U.S. Census American Fact Finder, Barnstable County's major industries are educational services, health care, and social services (25.1 percent); retail trade (13.3 percent); and professional, scientific, management, and administrative and waste management services (12.3 percent). The top ten employers in the county include healthcare providers, hospitals and emergency centers, Woods Hole Oceanographic Institution, Air National Guard, and manufacturing (Massachusetts Executive Office of Labor and Workforce Development)[5].

Table 4-3: Employment and Income

Area	Unemployment Rate	Percent in Labor Force	Median Household Income
United States	4.1%	63.4%	$57,652
Commonwealth of Massachusetts	4.0%	67.3%	$74,167
Dukes County	N/A	62.1%	$71,224
Nantucket County	N/A	73.7%	$105,171

[5] http://lmi2.detma.org/lmi/Top_employer_list.asp?gstfips=25&areatype=04&gCountyCode=000001

Area	Unemployment Rate	Percent in Labor Force	Median Household Income
Barnstable County	3.3%	59.9%	$68,048
Town of Barnstable	3.3%	62.9%	$66,864
Town of Yarmouth	4.3%	60.1%	$62,954
Town of Sandwich	3.3%	67.4%	$88,870
Town of Falmouth	3.5%	58.3%	$95,472

Source: U.S. Census Bureau, American Fact Finder, 2019.

The Airport is heavily influenced by the tourism industry for both Cape Cod and the Cape Cod Islands. In 2017, direct tourism spending during peak season was $1.1 billion. This includes supporting over 10,300 jobs within the travel industry. The effects of the influx of tourism to Barnstable County shows drastically in the hospitality industry with hotel occupancy and nightly rates jumping considerable during peak season. During the peak season, from June to August, hotel average occupancy rates from 2015 to 2019 were 75 percent and cost an average of $242 per night. Barnstable County also experiences increased activity during the shoulder season: May, September, and October. The five-year averages of these months were a 60 percent occupancy rate and an average cost of $156 per night. During off season months, hotel occupancy rates drop to an average of 36 percent and rates drop to an average nightly rate of $111[6].

4.5. COMMERCIAL PASSENGER ENPLANEMENTS

Passenger enplanements are a key measure in the forecasting efforts for commercial service airports. The enplanements forecast focuses on the total annual enplanements as well as the peak hour characteristics of busier traffic periods. The results of these forecasts are particularly useful in the assessment of the passenger terminal building and associated facilities such as auto parking lots. Beyond that, the types and quantities of growth extend beyond the terminal area itself to impact elements such as roadways and transportation networks, helping to ensure that they are adequately sized for future demand.

4.5.1. Historical Activity

The historical data for passenger enplanements presented in **Table 4-4** and **Figure 4-4** depicts a decline in passenger growth over the past ten years. The majority of these enplanements were lost with the introduction of the high-speed ferry service, which started service in the mid 2000's coupled by the affects post-September 11, 2001 and the loss of Island Airlines. Key market disruptions that can be evidenced in the table below include the Great Recession (2008-2009) and Island Air bankruptcy (2015-2016).

Table 4-4: Historical Passenger Enplanements

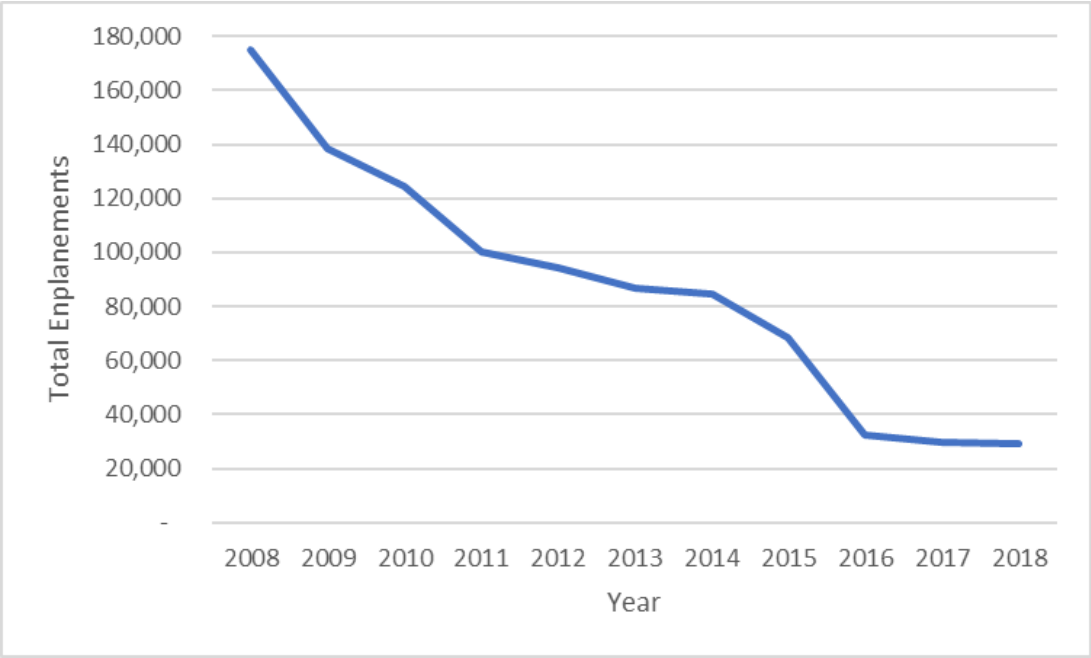
Year	Total Enplanements
2008	175,198
2009	138,451

[6] https://www.capecodchamber.org/members/membership/statistics/; retrieved April 30, 2020.

Year	Total Enplanements
2010	124,164
2011	100,450
2012	94,466
2013	86,745
2014	84,764
2015	68,519
2016	32,397
2017	29,719
2018	29,457

Source: Cape Cod Gateway Airport, 2019.

Figure 4-4: Historical Passenger Enplanements



Source: Cape Cod Gateway Airport, 2019.

4.5.2. Passenger Market Analysis

Not all passenger enplanements are created equal. Those passengers utilizing the national air transportation network have different demand characteristics than those flying to and from the Islands. Passenger booking data was analyzed for the 40-mile radius surrounding Hyannis to better quantify the passenger market potential for the Airport. The market was further refined to encompass of all of Cape Cod and the towns that straddle the Cape Cod Canal. This service area was previously displayed in **Figure 4-1**.

The passenger booking data is separated by originating (outbound, local traffic) and arriving (inbound, from other areas). For originating traffic, the data uses the billing zip code of the credit card used to purchase the ticket and matched it with the originating leg of the journey. The quarterly breakdown of the originating Hyannis passenger market is shown in **Table 4-5**.

Table 4-5: HYA Passenger Market

Airport/Quarter	Q1	Q2	Q3	Q4	Total	% Share
HYA	16	249	1,025	15	1,305	0.6%
BOS	41,937	45,233	40,973	44,330	172,474	82.8%
PVD	5,701	5,676	4,427	4,825	20,629	9.9%
MVY	25	225	1,331	114	1,696	0.8%
EWR/JFK/LGA	1,209	1,292	1,621	1,173	5,295	2.5%
Others	1,762	1,763	1,762	1,601	6,878	3.3%
Totals	50,651	54,439	51,139	52,058	208,277	100%

Source: Airline Data Inc., 2019.

Key takeaways from this data include:

- The originating Cape Cod-based air travel demand is consistent year-round; meaning Cape Cod residents conduct business and travel just as much in the off season as they do in the summertime.
- Boston captures the majority (82 percent) of the Cape-Cod passenger demand. Providence is the next closest at approximately 10 percent.
- Martha's Vineyard captures Cape Cod-based traffic during the summer months when their air service peaks. This traffic likely originated in the Falmouth/Woods Hole area.

For inbound traffic, the data uses billing zip code of the credit card used to purchase the ticket but uses the terminating point followed by credit card transactions to determine where the user ultimately traveled to. The quarterly breakdown of the terminating Hyannis passenger market is shown in Table 4-6.

Table 4-6: Terminating Hyannis Passenger Market (Excluding Cape Air)

Airport/Quarter	Q1	Q2	Q3	Q4	Total	% Share
HYA	N/A	1,080	3,490	57	4,626	2.1%
BOS	28,373	48,779	55,783	45,762	178,698	80.7%
PVD	2,090	3,645	4,480	3,557	13,772	6.2%
MVY	22	1,705	8,290	212	10,228	4.6%
EWR/JFK/LGA	1,585	1,535	1,124	1,886	6,131	2.8%
Others	855	1,818	3,588	1,660	7,922	3.6%
Totals	**32,925**	**58,562**	**76,755**	**53,134**	**221,376**	**100%**

Source: Airline Data Inc., 2019.

Key takeaways from this data include:

- As expected, there is a significant peak in the summer months with demand double that of the winter months.
- The overall size of the inbound market is not significantly larger than the Cape-originating passenger demand indicating that the summer tourism demand is largely a drive-market.

- As with the originating passenger demand, Martha's Vineyard captures Cape Cod-based traffic during the summer months when their air service peaks. This traffic likely originated in the Falmouth/Woods Hole area.

Overall, the current market retention is approximately 1.3 percent, indicating that there is an opportunity to attract air service to meet the local Cape-Cod based demand. The 5,931 passengers attributed to the HYA market equates to approximately 2,965 enplanements. For smaller airports in competitive regions (i.e. with multiple passenger options) high levels of market leakage can be expected. Even airports like Providence, with multiple airlines and over two dozen non-stop destinations, likely leaks over 25 percent of its market to Boston. **Table 4-7** displays enplanement levels with incremental market recapture increasing 1 percent annually, 2 percent annually, and an average of the two. This table also adds in the Island flying that is not included in the passenger booking data to represent an "upper bound" of theoretical passenger enplanements.

Table 4-7: Market Recapture

Year	Market Recapture Low (+1%/y)	Market Recapture High (+2%/y)	Blend	Other Traffic (Islands/Air Taxi)	"Upper Bound"
2020	2,965	2,965	2,965	23,225	26,190
2025	13,926	24,839	19,383	22,365	41,747
2030	24,839	46,666	35,753	21,294	73,416
2040	46,666	90,318	68,492	21,065	89,557

Source: McFarland Johnson, 2019.

4.5.3. Forecast Methodology and Industry Factors

Network - Network enplanements represent the summer seasonal service provided by JetBlue. This service has operated for six years with relatively stable passenger numbers. Passengers numbers have varied slightly due to runway projects at JFK airport and also the timing of Labor Day (end of season). The regional airline growth rate of 1.6 percent from the FAA National Aerospace forecast was applied to this passenger segment.

Secure - Secure enplanements represent the Cape Air passenger flights bound for Boston Logan or New York's JFK Airport via Nantucket, whose passengers and baggage are screened as they are entering the sterile passenger environment. While still operated via 9-seat piston aircraft, the passengers are accessing the national air transportation network in a similar manner to that of a regional airline. Therefore, the regional airline growth rate of 1.6 percent from the FAA National Aerospace Forecast was also applied to this passenger segment.

The combination of network and secure passengers represents the numbers to be used for terminal facility planning for the sterile hold room and secure passenger and baggage screening.

Non-Secure – Non-Secure enplanements reflect those associated with the Cape and Islands traffic, as well as the summertime flights to Westchester County Airport in White Plains, NY. The passenger traffic from Hyannis to both Martha's Vineyard and Nantucket has been on the decline for over 20 years as the costs of air travel have increased and high-speed ferries have been

introduced. This market segment is expected to continue to decline; however, there will always be a need for commercial air travel for time sensitive passengers doing day-trips for work (contractors, doctors, lawyers, etc.) in addition to the fact that the boats have a greater difficulty operating during inclement weather than aircraft. The baseline forecast applies a negative 2% growth rate to this passenger segment. Significant changes in this market dynamics such as the introduction of electric aircraft or autonomous aircraft that change the cost paradigm would merit an update to this forecast element.

Table 4-8 displays the previous calculations comprised of these elements compared to the FAA TAF. Given the relative consistency between the baseline forecast and the 2020 FAA TAF, particularly in the near term, the TAF was chosen as the baseline forecast for the purpose of the HYA Master Plan.

Table 4-8: Baseline Enplanement Forecast

Year	Secure	Non-Secure	Total	TAF (Selected Forecast)
2020	9,271	16,919	26,190	**26,104**
2025	10,037	15,293	25,330	**27,121**
2030	10,866	13,824	24,690	**28,193**
2040	12,735	11,295	24,030	**30,484**

Sources: Terminal Area Forecast, 2020 and McFarland Johnson, 2019.

4.5.4. Derivative Forecast Scenarios

The following sections outline additional derivative forecasts scenarios that have been developed to address potential market conditions that are reasonably foreseeable but not able to be specifically quantified based on service announcements or contracts. These forecast scenarios will be additive or subtractive to the selected baseline forecast and will be used for facility planning only.

New Seasonal Operator - This scenario entails the introduction of service by a regional operator using a 76-seat regional jet during the 90-day peak summer period. It includes incremental growth in load factors over time and an additional weekend flight starting in years 5 and 10, providing a total of up to 114 departures per year.

New Regional Airline - This scenario entails the introduction of service by a regional operator using a 76-seat regional jet providing year-round service with an average service level of twice-daily flights. It includes incremental growth in load factors over time and an additional weekend flight starting in year 10, providing a total of up to 730 departures per year.

New Low Cost/Ultra Low-Cost Airline - This scenario considers the introduction of a new low-cost or ultra-low-cost airline with twice-weekly flights for approximately 6 months of the year (either summer peak for inbound or winter/spring for Florida markets). It includes the addition of two weekly frequencies each year as service grows to year-round levels.

Market Interruption – While the projected growth and future for the Airport is stable, there is a potential for a temporary market interruption due to factors unrelated to the local passenger market. Examples of a market interruption include airline network changes (loss of service or

bankruptcy) or a 9/11-like national event. This scenario includes a 10 percent drop in passenger demand/traffic with a 5-year recovery period (two percent annually).

The enumerative value of this impact (10 percent) would be directly related to the respective year in which the effect would take place.

Table 4-9 compares the derivative scenarios and displays the change relative to the baseline forecast. With every scenario applied in year one, the forecast would remain consistent with what was previously described as the market recapture "upper bound". The scenario maximum assumes that a new summer seasonal service, new year-round regional service, and new ULCC service are all achieved as well as a 2 percent annual market recapture being accomplished. The "upper bound" scenario considers the new airline scenarios, but rather than a two percent recapture, calculates a 1.5 percent annual passenger market recapture.

Table 4-9: Enplanements Scenario Forecasts

Year	New Summer Seasonal	New Year-Round Regional	New ULCC	Combined	Baseline	Scenario Max	"Upper Bound"
1	5,335	30,888	7,363	43,586	26,104	69,690	26,190
5	5,609	32,535	9,629	47,773	27,121	74,894	41,747
10	6,357	35,556	12,461	54,373	28,193	82,566	73,416
20	7,538	40,360	18,125	66,023	30,484	96,507	89,557

Source: McFarland Johnson, 2020.

4.5.5. Peak Hour Enplanements/Peaking Characteristics

Traditional peaking characteristics for airport planning such as using 10-12 percent of annual activity for the peak month and between 15-20 percent for the peak hour would result in a significantly understated peak hour enplanement number compared to what occurs during the peak month.

For secure enplanements the average day of the peak month consist of a 100-seat JetBlue E-190 with an average load factor of about 82 percent and approximately four 9-seat Cape Air aircraft throughout the day. The peak hour enplanements would be approximately 87 passengers for the average day peak month; however, the Airport should plan for accommodating full aircraft meaning approximately 109 passengers. When flights are eventually up-gauged to the 140-seat A220, the peak hour enplanements are projected to be approximately 120 for the average day peak month with the Airport having capability to accommodate up to 149 passengers in the sterile area.

Non-secure enplanements will also vary greatly with the seasons. The peak hour of the average day of the peak month is approximately three 9-seat aircraft plus the potential for a chartered aircraft (same size) also departing from the terminal equating to a maximum of 36 non-secure peak hour enplanements. Unlike the secure enplanements, this number is not expected to grow over the planning period as previously discussed.

4.6. AIRCRAFT OPERATIONS

The FAA defines an aircraft operation as a takeoff or a landing and categorizes the operations by aircraft type and purpose. These categories include commercial (all airline operations at the passenger terminal), GA (both recreational and corporate), and military. The forecasting of these operations by category is used in the planning of terminal buildings, runways, taxiways, and other airport infrastructure.

The growth elements discussed for each operation type below include both local and airline industry factors that could impact aircraft operations at the Airport.

4.6.1. Historical Activity

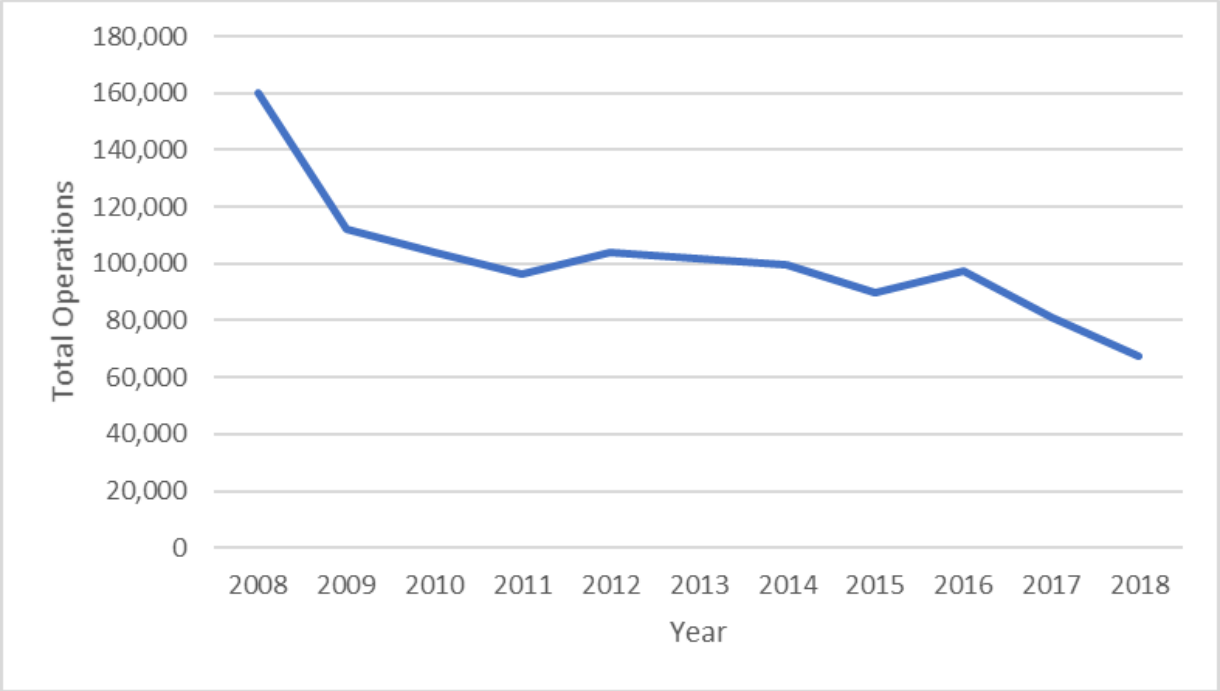
The historical data for aircraft operations, shown in **Table 4-10**, depicts various trends for each type of operation. Overall activity has declined at an average annual growth rate (AAGR) rate of -5.5 percent since 2008, as shown in **Figure 4-5**.

Table 4-10: Historical Aircraft Operations

Year	Air Carrier Ops	Air Taxi Ops	GA Itinerant Ops	GA Local Ops	Military Ops	Total Ops
2008	0	118,418	35,603	5,546	292	159,859
2009	12	84,246	20,774	7,070	271	112,373
2010	1	77,929	20,325	5,543	202	104,000
2011	0	69,238	19,783	7,058	201	96,280
2012	0	70,956	23,693	9,167	333	104,149
2013	0	67,798	24,796	9,067	367	102,028
2014	149	64,419	26,513	8,220	222	99,523
2015	159	58,758	24,067	6,733	251	89,968
2016	255	58,001	29,316	9,381	212	97,165
2017	186	47,092	26,521	7,081	136	81,016
2018	183	35,595	22,340	9,009	223	67,350
2019	167	32,483	22,241	10,839	387	66,117

Source: Cape Cod Gateway Airport Management, 2020.

Figure 4-5: Historical Aircraft Operations



Source: Cape Cod Gateway Airport Management, 2019.

4.6.2. Forecast Methodologies

The following forecast methodologies were reviewed to determine which would be the most realistic for the Airport. Different methodologies were deemed the most appropriate to use for each type of operation. Air carrier and air taxi operations utilized the FAA National Aerospace Forecast methodology. GA jet operations utilized a blended forecast of the New England Region market share and the national growth rate. Light GA operations utilized a forecast that is a blend of the ten-year trend analysis and the National Aerospace forecast.

Trend Analysis – This forecast methodology examines historical trends in activity at a specific airport and applies the historical trends to current demand levels to produce projections of future activity. Trend line analysis assumes that activity patterns, and the factors that have historically affected activity, will continue to influence demand levels, remain similar over an extended period of time. Linear trend projections are typically used to provide baseline forecast that reflect stable market conditions. AAGR for 5 and 10-year increments were looked at for the Airport.

Market Share Analysis – This forecast methodology is a method for projecting future aeronautical activity that can be applied to any measure for which a reliable higher-level forecast is available. Using this methodology, historical shares are calculated and used as a basis for projecting future shares. This approach is a "top-down" method of forecasting since forecasts of larger aggregates are used to derive forecasts for smaller elements of the system – in this case, HYA.

National Aerospace Forecast – This forecast methodology looks at FAA presented aviation activity forecasts from several different sources which can be referenced when forecasting future aeronautical demands for a specific airport. Primarily, they include the FAA National Aerospace

Forecast which provides growth projections for the entire aviation industry and the FAA TAF which utilizes identified national growth trends coupled with historical local growth trends to produce airport-specific activity forecast. The FAA's National Aerospace Forecast for 2019-2039 identifies projected AAGR for a variety of fixed wing aircraft through the end of its forecast period (2040).

Operations Per Based Aircraft (OPBA) – This forecast methodology assigns a representative level of aircraft operations for each based aircraft. The existing OPBA ratio (31,349/38 or 825) was utilized as the OPBA metric in this analysis of GA operations and the existing OPBA ratio (67,350/38 or 1,772) was utilized as the OPBA metric in this analysis of all aircraft operations.

Massachusetts Statewide Airport System Plan - The Massachusetts Statewide Airport System Plan (MSASP) guides the development of 37 public use Massachusetts airports. It is the goal of Massachusetts Department of Transportation, Aeronautics Division (MassDOT Aeronautics) "to help facilitate the state's vision of fully integrated, safe, efficient, and seamless transportation link between the people and products of Massachusetts with national and international destinations through an efficient airport system that will help build upon economic development success and improve the quality of life in the Commonwealth."[7] The MSASP provides an assessment of current system conditions and recommendations to facilitate the long-term growth of the state airports as they fit within the greater statewide transportation system. The MSASP forecasted an AAGR for GA operations of 1.4 percent from 2008 to 2030.

4.6.3. Growth Influencers

Air Carrier/Taxi – As airlines, especially major/network carriers, up-gauge, it is anticipated they will deploy larger aircraft in place of greater frequency. This will maintain or even boost enplanements however it will slow overall operational growth.

Trends for low cost carriers (LCCs) and ultralow cost carriers (ULCCs) are expected to continue into the future, with growth coming from the introduction of additional weekly frequencies and/or additional destinations (likely seasonal to start). Potential new destinations could include Philadelphia, PA; New York City area; or Washington DC.

Growth is expected to be extremely limited in the aircraft segment of fewer than 60 seats until there is an industry change that significantly improves the availability of pilot resources (i.e. single pilot operations) and/or provides significant fuel saving advantages (i.e. electric powered aircraft).

General Aviation – Initially starting with heightened security procedures after 9/11 followed by the combination of the Great Recession and increased fuel and ownership costs have resulting in sharp declines in discretionary GA activity over the last 10-20 years. After being stripped to near-core demand only, itinerant GA has begun to grow again. Much of this growth is due to enhancement in turbine aircraft efficiencies and the introduction of smaller turbine powered aircraft which has made entry-level business aviation more affordable than ever. Single engine turbine powered

[7] *Massachusetts Department of Transportation, Aeronautics Division. Massachusetts Statewide Airport System Plan. 2010.*

aircraft like the 9-seat Pilatus PC-12 and the 4-9 seat very-light-jet Embraer Phenom 100/300 can rival the affordability of commercial aviation in some cases.

Civil (Local) aviation bared the brunt of the recession and fuel spike. However, now with the pilot shortage and increased need for flight training, civil aviation has begun to grow again.

Military – The growth of military operations is largely dependent on the security interests of the nation. Military aircraft are constantly relocated throughout the aviation system. Threats to the United States and disaster relief efforts may impact the amount of military operations at and around the Airport. Most military operations conducted at civilian airports is associated with training activity.

Unmanned Aerial Systems (UAS) - Presently the FAA does not have a counting metric for UAS activity at airports as their integration into the national airspace has been limited. Operations forecasts should be reviewed and updated as UAS integrate as part of the national airspace and airport operations and FAA identifies a metric/category in which to account for this activity.

4.6.4. Air Carrier and Air Taxi

Air carrier operations at the Airport are limited to the summertime JetBlue activity as this category represents operations on aircraft with greater than 60 seats. The recommended forecast for this category is to use the FAA Aerospace Forecast at 2.1 percent annual growth as is reflects the national trends associated with the air carrier operations throughout the national airspace system. Should any of the derivative scenarios come to fruition, the additional operations would also be categorized as air carrier.

Air taxi and commuter operations are those commercial in nature with less than 60 seats, this includes charter operator activities. All Cape Air, Rectrix, and similar type operators fall in this category. The National Aerospace Forecast projects a decline of 0.6 percent in this market segment over the next 20 years, likely due to the larger gauge in regional jets (increasing from 50 to 70+) and the increased strain on available pilots for smaller capacity aircraft flying. The latter of those factors has been one of the reasons for decreased frequency on routes to Nantucket and Boston. As discussed in the enplanements section, the flying to the Islands is expected to continue to decline as result of increased high-speed ferry service. Based on these factors, a negative growth rate of 0.6 percent is considered prudent for this market segment.

4.6.5. General Aviation

When looking at the historic data, incremental trends, market share, national growth rates, and operations per based aircraft were analyzed. The preferred methodologies used to forecast aircraft operations for GA operations were blended forecasts of the New England Region market share and the national growth rate for itinerant GA as provided by the National Aerospace Forecast. The GA local preferred methodology was the AAGR of the 10-year historic trend and the national growth rate for local GA as provided by the National Aerospace Forecast.

4.6.6. Military

With constant changes in national security and relief needs, military operations tend to fluctuate over time. At the Airport, itinerant military operations have been relatively stable over the past 10

years averaging approximately 223 total annual operations: 95 itinerant operations and 128 local operations. The FAA TAF reports zero growth in military operations at the Airport; it is anticipated the annual averages will remain near the historical average.

4.6.7. Annual Operations by Type

The annual operations forecast broken down by type are shown in **Table 4-11**.

Table 4-11: Annual Operations Forecast by Type

	Itinerant					Local			Total
Year	Air Carrier	Air Taxi	GA	Mil	Total	GA	Mil	Total	Ops
Baseline	183	35,595	22,340	95	58,213	9,009	128	9,137	67,350
2025	197	32,360	24,639	95	57,291	9,800	128	9,928	67,219
2030	219	31,401	26,514	95	58,229	10,447	128	10,575	68,804
2040	270	29,567	30,956	95	60,888	11,985	128	12,113	73,001

Sources: Cape Cod Gateway Airport Management, 2019; McFarland Johnson, 2019.

4.6.8. Peaking Characteristics - Aircraft Operations

Like the peaking characteristics used for passenger enplanements, annual operations numbers, when divided equally over the year and throughout the day, will not accurately identify capacity constraints or facility needs during busier periods. To accurately identify airport requirements for facility planning, peaking characteristics are broken down into the following elements:

Peak Month – The peak month at an airport represents the busiest month during a calendar year. The peak month may not be the same each year; for HYA, the peak months typically occur during the summer, Memorial Day through Labor Day. Peak month operations at HYA account for 11.5 percent of total annual operations.

Average Day Peak Month – The average day of the peak month (ADPM) is the industry standard measure used when planning and analyzing an airport's peaking characteristics. In the case of HYA the peak month activity is divided by 31 days.

Peak Hour – Peak hour operations is a critical metric when planning for airfield capacity. Traditionally the operational peak hour typically represents between 12 percent and 17 percent of the daily operations total. A peaking factor of 17 percent will be applied to the peak hour planning for the Airport.

Peak operational characteristics for the Airport are displayed in **Table 4-12**.

Table 4-12: Peaking Characteristics

	Baseline	2025	2030	2040
Operations	67,350	67,219	68,804	73,001
Peak Month	7,745	7,730	7,912	8,395
Average Day Peak Month	258	249	255	271
Peak Hour	44	42	43	46

Sources: Cape Cod Gateway Airport Management, 2019 and McFarland Johnson, 2019.

4.7. BASED AIRCRAFT

Forecasting the number and type of based aircraft is critical to planning future GA facilities, especially for the type and size of hangers and aircraft movement and parking areas. The growth elements below discuss the factors that influence the number of based aircraft at HYA.

4.7.1. Historical Activity

The FAA defines a based aircraft as an aircraft that is operational and airworthy which is based at the facility in question for most of the year. Based aircraft are major contributors to the economics of an airport as they generate revenue from tie-down, hangar rentals, and fuel sales. Airport Management keeps record of based aircraft at the Airport. Cape Air has been operating out of the Airport since the early 1990s. Since Cape Air flies in and out of the Airport daily, Cape Air aircraft RON on a nightly basis. Therefore, to account for these aircraft, ten additional multi-engine aircraft were added to each year of the historic based aircraft. The historical based aircraft by type can be seen in Table 4-13. Figure 4-6 shows the history of total based aircraft at the Airport.

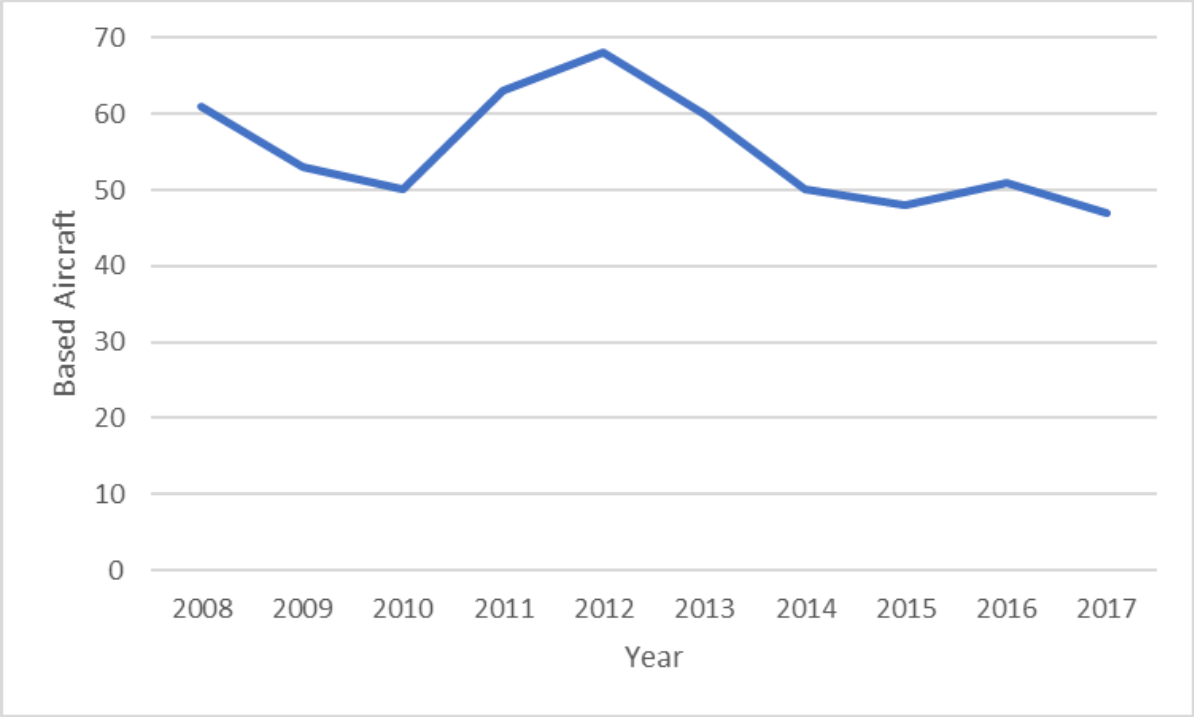
Table 4-13: Historical Based Aircraft by Type

Year	Single Engine	Multi-Engine	Jet	Other	Total*
2008	43	17	0	1	61
2009	37	15	0	1	53
2010	34	15	1	0	50
2011	43	17	3	0	63
2012	43	21	3	1	68
2013	37	17	5	1	60
2014	33	17	0	0	50
2015	31	17	0	0	48
2016	31	19	1	0	51
2017	31	16	0	0	47
2018	31	16	0	0	47

Note: 10 Cape Air planes added to based aircraft numbers

Sources: FAA TAF, 2019 (2011 only) and Cape Cod Gateway Airport Management, 2019.

Figure 4-6: History of Based Aircraft



Sources: FAA TAF, 2019; Cape Cod Gateway Airport Management, 2019.

4.7.2. Forecast Methodologies

The following forecast methodologies were reviewed to determine which would be the most realistic for the Airport.

Trend Analysis – This forecast methodology examines historical trends in activity at a specific airport and applies the historical trends to current demand levels to produce projections of future activity. Trend line analysis assumes that activity, and the factors which have historically affected activity, will continue to influence demand levels are similar rates over an extended period of time. Linear trend projections are typically used to provide baseline forecast that reflect stable market conditions. AAGR for 5 and 10-year increments were looked at.

Market Share Analysis – This forecast methodology is a method for projecting future aeronautical activity that can be applied to any measure for which a reliable higher-level forecast is available. Using this methodology historical shares are calculated and used as a basis for projecting future shares. This approach is a "top-down" method of forecasting since forecasts of larger aggregates are used to derive forecasts for smaller elements of the system – in this case, HYA.

National Growth Rate – This forecast methodology looks at FAA presented aviation activity forecasts from several different sources which can be referenced when forecasting future aeronautical demands for a specific airport. Primarily, they include the FAA National Aerospace Forecast which provides growth projections for the entire aviation industry and the FAA TAF which utilizes identified national growth trends coupled with historical local growth trends to produce

airport-specific activity forecast. The FAA's National Aerospace Forecast for 2019-2039 identifies projected AAGR for a variety of fixed wing aircraft through the end of its forecast period (2040).

Massachusetts Statewide Airport System Plan **-** The MSASP provides an assessment of current system conditions and recommendations to facilitate the long-term growth of the state airports as they fit within the greater statewide transportation system. The MSASP utilized a based aircraft annual average growth rate of 1.4 percent from 2009 to 2030.

4.7.3. Growth Factors

Single/Multi Piston – Piston (single and multi) aircraft are forecasted to follow a negative growth rate over the next 20 years. As the economic advantage of aircraft leasing, renting, fractional ownership, and flying clubs become more popular, the number of individually owned piston engine aircraft is decreasing in most regions. While the aircraft counts are negative, the negative aspects are offset from enhanced utilization from a broader user base not burdened by high-entry costs.

Turbine/Jet – Advancements in fuel efficiency and aircraft technology has resulted in a wide variety of new products entering the turbine and jet aircraft market. More aircraft options at lower costs have increased the number of aircraft in the business aviation market not only as a lease/purchase capacity but also more fractional ownership and charter options. With this, and the national forecast for based turbine aircraft following a positive trend, it is forecasted that turbo propeller and turbo jet aircraft will increase throughout the planning period.

Unmanned Aerial Systems (UAS) - Presently the FAA does not have a counting metric for UAS aircraft based at airports as their integration into the national airspace has been limited. Based aircraft forecasts should be reviewed and updated as UAS integrate as part of the national airspace and airport operations and FAA identifies a metric/category in which to account for this activity.

4.7.4. Based Aircraft Forecast

Forecasting the number and type of based aircraft is critical to planning future GA facilities, especially for hangers, aircraft movement areas, and aircraft parking areas. The growth elements below discuss the factors that influence the number of based aircraft at the Airport.

The National Aerospace Forecast was utilized to calculate the based aircraft growth at the Airport. Separate growth rates were used for single engine, piston multi-engine, turbo prop, and turbo jet aircraft when calculating the total based aircraft. The multi-engine growth displayed in the table below combines both the declining multi-engine piston aircraft as well as the growth in turbo prop aircraft. Cape Air operates out of the Airport with multiple multi-engine piston aircraft. While these aircraft are listed as RON, these aircraft RON daily and therefore are accounted for within the based aircraft. Ten Cape Air aircraft were added to the forecast and are expected to remain consistent throughout the planning period.

The based aircraft forecast broken up by type are in Table 4-14.

Table 4-14: HYA Based Aircraft Forecast

Year	Single Engine	Multi-Engine	Jet	Total
Baseline	31	16	1	48
2025	29	17	1	47
2030	27	17	1	45
2040	25	17	2	44

Note: Baseline utilized 2020 data.
Source: McFarland Johnson, 2020.

4.8. ITINERANT GENERAL AVIATION PASSENGERS

GA passengers are defined as the boarding of a passenger on an aircraft at an airport. For HYA, GA passengers consist of passengers traveling to/from the Airport (itinerant) using GA facilities (excluding pilots). Unlike commercial airline passengers and charters, the number of GA passengers is not recorded by either the FAA or the Airport.

To estimate GA passenger enplanements at the Airport, guidance pertaining to the sizing of GA Terminal Buildings contained in *ACRP Report 113, Guidebook on General Aviation Facility Planning* (ACRP 113) is utilized to establish a reasonable point of reference. ACRP 113 states that for planning purposes, a factor of 2.5 people (pilots and passengers) can be assumed. For this analysis, the planning factor of 2.5 people is applied to baseline GA itinerant operations to determine the reasonableness of the Airport's GA passenger and crew estimate. Additionally, since the purpose of this analysis is to forecast passengers only, the factor was also reduced to 1.5 people per GA itinerant operation. The results are presented in Table 4-15.

Table 4-15: GA Passengers

Item	GA Passengers and Crew	GA Passengers Only
Baseline GA Itinerant Operations	22,340	22,340
Planning Factor (People per Operation)	2.5	1.5
Baseline GA Passengers	55,850	33,510
2040 GA Passengers	77,389	46,433

Sources: McFarland Johnson, 2019; Cape Cod Gateway Airport Management, 2019.

4.9. ANNUAL INSTRUMENT OPERATIONS

Annual instrument arrivals are important to an airport when planning for capacity and demand instrument conditions. Most GA pilots are visual flight rules (VFR) pilots, but those who are instrument flight rules (IFR) certified and plan on flying into inclement weather will need to file a flight plan. Flight plans may be filed for both VFR and IFR flights but are most commonly used for IFR or combined IFR and VFR flights. The FAA's Traffic Flow Management System Count (TFMSC) identified 16,303 instrument operations in 2018. In 2018, the TAF reported HYA to have 72,442 total aircraft operations. The 16,303 instrument approaches account for approximately 23 percent of total operations. The 10-year AAGR has been -5.83 percent. In 2010, Island Airlines had a change in leadership within the company after the firing of the company president. Airline operations began to see a decrease after 2010 and the airline suddenly closed in December of 2015, ending

24 years of service at the Airport[8]. Air taxi growth at the Airport is consistent with the national trends over the years. From 2016 to 2018, there has been a growth rate of 7.09 percent annually for instrument operations. Instrument operations are forecasted to maintain the current percentage of total instrument operations to total commercial operations resulting in a total of 13,597 instrument operations in 2040.

Table 4-16 shows the historical annual instrument operations at the Airport.

Table 4-16: Historical Annual Instrument Operations

Year	Total Instrument Operations
2009	27,989
2010	26,659
2011	21,474
2012	18,178
2013	19,887
2014	17,696
2015	17,708
2016	14,215
2017	15,544
Baseline	16,303

Source: FAA Traffic Flow Management System Count; Retrieved November 14, 2019.

4.10. FORECAST SUMMARY

4.10.1. Comparison with FAA Terminal Area Forecast

To confirm validity, master plan aviation forecasts are often compared with other aviation forecasts prepared for the Airport and the region. Ideally, this report's forecasts should be reasonably consistent with other forecasts of future airport activity, and compatible with forecasts for the larger region. With master plan forecasts being much more specific to an airport, it is not unusual to see some variation from national forecasts. The most useful forecasts for comparison are those prepared by the FAA with the standard being the TAF and the national and regional forecasts previously referenced in this report. The TAF is prepared annually and includes airport forecasts for all active National Plan of Integrated Airport Systems (NPIAS) airports. Table 4-17 shows the compared results between the selected forecast and that of the FAA's TAF.

[8] https://www.capecodtimes.com/article/20151211/news/151219811; *Retrieved November 18, 2019.*

Table 4-17: Aviation Demand Forecast Compared to FAA Terminal Area Forecast

	Actual	Forecast		
	Baseline	2025	2030	2040
FAA TAF				
Enplanements	26,104	27,121	28,193	30,484
Total Operations	62,983	64,991	67,075	71,483
Based Aircraft[1]	39	46	51	61
Master Plan Forecast				
Enplanements	26,104	27,121	28,193	30,484
Total Operations	67,350	67,219	68,804	73,001
Based Aircraft	48	47	45	44
Pct. Difference From TAF				
Enplanements	0.00%	0.00%	0.00%	0.00%
Total Operations	6.93%	3.43%	2.58%	2.12%
Based Aircraft[1]	23.08%	2.17%	-11.76%	-27.87%

[1]TAF does not include 10 Cape Air aircraft

Sources: FAA TAF, 2020; Cape Cod Gateway Airport Management, 2019; and McFarland Johnson, 2020.

4.11. EXISTING AND FUTURE DESIGN AIRCRAFT

The Runway Design Code (RDC) used in airport planning is derived from the features of the most demanding aircraft using the Airport on a regular basis coupled with the best available instrument approach minimums. The first component, depicted by a letter, is the Aircraft Approach Category (AAC) and relates to aircraft approach speed (operational characteristics). The second component, depicted by a Roman numeral, is the Airplane Design Group (ADG) and relates to either the aircraft wingspan or tail height (physical characteristics), whichever is most restrictive. The third component relates to the visibility minimums expressed by Runway Visual Range (RVR) values. **Table 4-18** displays the RDC criteria used in airport planning.

In 2019, 422 aircraft operations fell within ADGs III and IV. The TFMSC accounts for only 23 percent of airport operations. Therefore, it is reasonable to expect that at least 80 ADG III and IV aircraft landed at the airport within the remaining 77 percent of operations that were not reported under traffic flow reports.

The following ADG III aircraft operated at the Airport in 2019:

- Embraer 190 (E190)
- Gulfstream V / G500
- Bombardier BD-700 Global 5000 (GL5T)
- Bombardier BD-700 Global Express (GLEX)

Currently, Jet Blue operates the Embraer 190 at the Airport. Over the next five years, Jet Blue will be replacing all E190 aircraft with Airbus 220 aircraft. Existing and future design aircraft for FAA airfield standards and GA design aircraft, for airfield elements that do not see commercial operations (Taxiway B and east of Runway 6-24) are shown in **Table 4-19** and **Table 4-20**,

respectively. The A220-300 is one of many C-III aircraft that use the Airport on a regular basis. Other C/D-III aircraft that frequently use the Airport include Gulfstreams, Global Express, and other large business jets. The existing and future AAC-ADG is C/D-III. While the A220-300 and design group C-III is used for airfield dimensional standards, the runway length analysis in the facility requirements will look at a family of aircraft, as aircraft size is not directly commensurate with runway needs.

Table 4-18: FAA Airport Reference Code

FAA Airport Reference Code Parameters				
Category	Approach Speed	Group No.	Wing Span (ft.)	Tail Height (ft.)
	(knots)	I	< 49	< 20
A	<91	II	49 to < 79	20 to < 30
B	91 to < 121	III	79 to < 118	30 to < 45
C	121 to < 141	IV	118 to < 171	45 to < 60
D	141 to < 166	V	171 to < 214	60 to < 66
E	166 or more	VI	214 to < 262	66 to < 80

Source: FAA AC 150/5300-13A, Airport Design.

Table 4-19: Existing and Future Design Aircraft – FAA Airfield Standards

Both Runways	Existing	Future
Aircraft Model	**E190**	**A220-300**
Length Overall	118.9’	127’
Wingspan	94.3’	115.1’
Tail Height	34.6’	38.7’
Maximum Takeoff Weight (pounds)	105,359	154,000
Typical Approach Speed (knots)	124	130
Approach Speed Category	C	C
Aircraft Design Group	III	III

Source: FAA Aircraft Characteristics Database, Oct. 2018.

Table 4-20: Existing and Future GA Design Aircraft

Both Runways	Existing	Future
Aircraft Model	Gulfstream V / G500	Gulfstream V / G500
Length Overall	91.2’	91.2’
Wingspan	86.3’	86.3’
Tail Height	25.5’	25.5’
Maximum Takeoff Weight (pounds)	79,600	79,600
Typical Approach Speed (knots)	150	150
Approach Speed Category	D	D
Aircraft Design Group	III	III

Source: FAA Aircraft Characteristics Database, Oct. 2018.

Cape Cod Gateway Airport

Airport Master Plan

Facility Requirements

McFarland Johnson

5. Facility Requirements

This chapter presents the airside and landside facility requirements necessary to accommodate existing and forecasted demand, or the anticipated future aircraft operations, at Cape Cod Gateway Airport (HYA or the Airport) in accordance with Federal Aviation Administration (FAA) design criteria and safety standards. The facility requirements are based upon several sources, including the aviation demand forecasts presented in Chapter 4, *Forecasts;* FAA Advisory Circular (AC) 150/5300-13A, *Airport Design;* and 14 Code of Federal Regulations (CFR) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace.* The findings of this chapter serve as the basis for the formulation of the airside and landside alternatives and future development recommendations for both. The major components of this chapter follow FAA guidance and are listed below:

- Executive Summary of Analysis
- Airside Facility Requirements
- Passenger Terminal Facility Requirements
- Parking and Roadway Access Facility Requirements
- General Aviation and Landside Facility Requirements
- Support Facilities and Utilities
- Facility Requirements Summary

The aviation industry is continuously changing with new aircraft, changing Federal regulations and standards, and changes in airline and general aviation networks. This chapter reviews the existing Airport, compares it to the existing Federal regulations and standards (calendar year 2021), and determines what changes the Airport needs (facility requirements) based on existing and forecast future aircraft operations and Federal regulations and standards. **Appendix F** provides a resource for acronyms and definitions.

5.1. EXECUTIVE SUMMARY OF ANALYSIS

A high-level summary of recommendations can be seen in **Table 5-1**. For a full list of all recommendations, please refer to **Section 5.7** at the end of this chapter.

Table 5-1: Summary of Recommendations

FAA Guideline	Analysis Results and Recommendation	More Details
Airfield Capacity	• Runway 6-24 serves as the current primary visual flight rule (VFR) runway • Runway 15-33 serves as the current primary instrument flight rules (IFR) runway • A secondary C-III runway is justified due to peak season capacity to provide operational flexibility and minimize community impacts • Extend a runway to accommodate more weight Class C aircraft (existing capacity is 12-27% of weight Class C	Section 5.2.1

FAA Guideline	Analysis Results and Recommendation	More Details
	aircraft (weighing 12,500-300,000 pounds) in wet[1] runway pavement conditions)	
Runway Length	• Extend one or both runways to 6,000 - 6,400 feet to meet the needs of both general aviation (GA) and commercial operations (existing Runway 6-24 is 5,425 feet long and Runway 15-33 is 5,253 feet long)	Section 5.2.2
Runway Width	• The current pavement width of Runways 15-33 and 6-24 should remain at 150 feet to accommodate the changing commercial fleet mix	Section 5.2.3
Runway Orientation	• A crosswind runway (Runway 15-33) is justified because Runway 6-24 provides less than standard 95% coverage at 10.5- and 13-knot winds	Section 5.2.5
Runway Safety Areas, Runway Object Free Areas, Runway Protection Zones	• Review alternatives for incremental improvements and enhanced land use controls by the Airport per FAA standards; establish a policy for incremental safety enhancements in future projects	Sections 5.2.6 – 5.2.8
Passenger Terminal Ramp	• Plan for a second aircraft parking position based upon a potential increase in passenger service or changes to the type of aircraft using the terminal, which could trigger reconfiguration	Section 0
Airfield Geometry	• Resolve the areas of non-standard geometry to meet FAA standards as much as practicable	Section 5.2.13
Passenger Terminal Facility	• Expand the existing terminal building to at least 35,000 square feet (SF) to meet existing demand (existing terminal is approximately 30,000 SF) • Plan for up to 55,000 SF to meet demand at 200 peak (design) hour passengers	Section 5.3
Airport Access and Signage	• Conduct Airport signage and access study	Section 5.4.1
Aircraft Hangars	• Identify and set aside land areas to accommodate potential additional individual and conventional hangars as growth and new business interest occurs (estimated 6 individual and 8 conventional hangars)	Section 5.5.1
GA Aircraft Parking Ramps	• Identify and set aside land area to accommodate potential additional aircraft parking ramps as growth occurs (estimated 40,000 - 67,000 SF of additional apron space)	Section 5.5.2
Aviation Fueling	• Plan for an additional Jet A fuel tank to be located in the existing fuel farm area • Provide self-service option for 100LL Avgas fuel • Plan for electric aircraft charging	Section 5.6.1
Aircraft Rescue and Fire Fighting	• Provide housing for all vehicles to maximize their useful life	Sections 5.6.3 and 5.6.4

FAA Guideline	Analysis Results and Recommendation	More Details
(ARFF) / Maintenance/ Snow Removal Equipment (SRE)		

[1] Does not account for snow, ice, or other contamination factors.
Source: McFarland Johnson analysis, 2021.

5.2. AIRSIDE FACILITY REQUIREMENTS

Airside facility requirements address the items that are directly related to the arrival and departure of aircraft, primarily runways and taxiways and their associated safety areas. To assure that all runway and taxiway systems are correctly designed, the FAA has established criteria for use in planning and design of airfield facilities. The selection of appropriate FAA design standards for the development of airfield facilities is based on the characteristics of the most demanding aircraft expected to use an airport or that particular facility at an airport on a regular basis (500 operations per year). Correctly identifying the future aircraft types that will use an airport is particularly important, because the design standards that are selected will establish the physical dimensions of facilities and the separation distances between facilities that will impact airport development for years to come. Use of appropriate standards will ensure that facilities can safely accommodate aircraft using the Airport today, as well as aircraft that are projected to use the Airport in the future.

Airport design standards are set forth in FAA AC 150/5300-13A, *Airport Design*. This document provides criteria for grouping of aircraft into runway design codes (RDC). The RDC consists of a letter representing an aircraft approach category (AAC) which is based on approach speed, a number representing an airplane design group (ADG) which is based on tail height and/or wingspan, and a number representing the visibility minimums associated with the runway (based on corresponding runway visual range (RVR) values in feet). These groupings are presented in Table 5-2.

Table 5-2: Runway Design Code Characteristics

Aircraft Approach Category (AAC)	
Category	**Approach Speed**
A	Approach speed less than 91 knots
B	Approach speed 91 knots or more but less than 121 knots
C	Approach speed 121 knots or more but less than 141 knots
D	Approach speed 141 knots or more but less than 166 knots
E	Approach speed 166 knots or more

Note: 1 knot is equivalent to 1.15078 miles per hour

Airplane Design Group (ADG)	
Group	Tail Height (feet) (and/or) // Wingspan (feet)
I	less than 20 // less than 49
II	20 - less than 30 // 49 - less than 79
III	30 - less than 45 // 79 - less than 118
IV	45 - less than 60 // 118 - less than 171
V	60 - less than 66 // 171 - less than 214
VI	66 - less than 80 // 214 - less than 262

Visibility Minimums (VIS)	
RVR (feet)	Flight Visibility Category
VIS	Visual Approaches
4000	Lower than 1 statue mile (SM) but not lower than ¾ SM (approach procedure with vertical guidance (APV) greater than or equal to ¾ SM but less than 1 SM)
2400	Lower than 3/4 SM but not lower than 1/2 mile
1600	Lower than 1/2 SM but not lower than 1/4 mile
1200	Lower than 1/4 SM

Source: FAA AC 150/5300-13A, Airport Design.

Review of Chapter 4, *Forecasts*, indicates that the existing and future design aircraft are in the AAC-ADG C-III family of aircraft for airfield dimensional standards. For the purposes of the Airport Layout Plan, specific aircraft need to be designated. The existing design aircraft is the Embraer 190 (E190) and the future design aircraft for the Airport is the Airbus A220 series. Both of these aircraft are designated as AAC-ADG C-III, which is also the same design group as the most demanding business jet aircraft in the general aviation fleet that also regularly use the Airport. The runway length analysis will review the family of C-III aircraft, as aircraft size is not directly commensurate with runway needs.

Not all Airport facilities will be designed to accommodate the most demanding aircraft at the Airport. Certain airside facilities and landside facilities, such as taxiways and general aviation areas that are not intended to serve large aircraft, may be designed to accommodate less demanding aircraft, where necessary, to ensure cost effective development. Designation of the appropriate standards for all proposed development on the Airport is shown on the Airport Layout Plan (ALP).

Airfield facility requirements are covered in this section as follows:

- Airfield Capacity Analysis
- Runway Length
- Runway Width
- Runway Strength and Condition
- Runway Orientation
- Runway Safety Areas
- Runway Object Free Areas
- Runway Protection Zones

- Runway Visibility Zone
- Runway Pavement Markings
- Taxiways
- Passenger Terminal Ramp
- Potential Hot Spots and Geometry Requirements
- Airfield Lighting and Signage
- Visual Approach Aids
- Airfield Facility Requirements Summary

5.2.1. Airfield Capacity Analysis

Airfield capacity refers to the ability of an airport to safely accommodate a given level of aviation activity; throughput (or the number of landings and takeoffs) that an airport's runways are able to sustain during periods of high demand. The FAA has prepared several publications and computer programs to assist in the calculation of capacity. This report used the methodologies described in FAA AC 150/5060-5, *Airport Capacity and Delay*. Capacity is described through three terms:

- **Annual service volume (ASV):** A reasonable estimate of an airport's annual capacity. It accounts for differences in runway use, aircraft mix, weather conditions, etc. that would be encountered over a year's time.
- **Visual flight rules (VFR) hourly capacity**: A measure of the maximum number of aircraft operations which can be accommodated on the airport in an hour in visual conditions (cloud ceiling is at least 1,000 feet above ground level (AGL) and visibility is at least three statute miles (SM)).
- **Instrument flight rules (IFR) hourly capacity**. A measure of the maximum number of aircraft operations which can be accommodated on the airport in an hour in instrument conditions (cloud ceiling is at least 500 feet but less than 1,000 feet AGL and visibility is at least one SM but less than three SM).

As demand approaches capacity, individual aircraft delay is increased.

Factors Affecting Capacity

The airfield capacity analysis considers several factors that affect the ability of the Airport to process aviation demand. They include:

- Meteorological Conditions
- Runway/Taxiway Use Configurations
- Runway Utilization
- Aircraft Fleet Mix
- Percent Arriving Aircraft
- Percent Touch-and-Go Operations
- Exit Taxiway Locations
- and Peaking Characteristics.

The following provides information on existing conditions at the Airport for use in capacity calculations. Such data helps formulate the calculations that are used to determine development recommendations that must be implemented to meet that capacity.

Meteorological Conditions

Meteorological conditions specific to the location of an airport not only influence the airfield layout but also affect the use of the runway system. As weather conditions change, airfield capacity can be reduced by low cloud ceilings and visibility. Runway usage will change as the wind speed and direction change, also impacting the capacity of the airfield.

To better understand the impact of deteriorating weather on capacity, a brief synopsis of aviation flying conditions is provided. For the purposes of capacity evaluation, these flying conditions are described as VFR conditions, IFR conditions, and poor visibility and ceiling conditions. Decreasing cloud ceiling and visibility require an increase in aircraft spacing, as mandated by the FAA. This increase in aircraft spacing causes decreases in the frequency at which aircraft can land and depart the airfield over a specified period of time, reducing hourly and annual capacity.

To better understand the impact that inclement weather has on the Airport, climate data from the National Oceanic and Atmospheric Administration (NOAA) was obtained and analyzed to determine the ceiling and visibility characteristics at this site. Based upon this data since 2012, VFR conditions occur at the Airport approximately 81 percent of the time and IFR conditions occur approximately 18 percent of the time. Poor visibility and ceiling conditions are present at the Airport approximately one percent of the time.

Notably, IFR conditions, shown in **Appendix G**, most commonly occur May through July. During IFR conditions, Runway 15 is the favored runway end six months of the year and is also the runway end with the best instrument approach procedures.

Conclusion of Meteorological Conditions: Based on the above data, Runway 15-33 serves as the primary IFR runway and Runway 6-24 serves as the primary VFR runway.

Runway/Taxiway Use Configurations

The configuration of the runway system refers to the number, location, and orientation of the active runway(s), the type and direction of operations, and the flight rules in effect at a particular time. Runway and taxiway configuration is used in conjunction with meteorological conditions to determine capacity. Capacity analyses will typically be run for several wind/weather configurations that are used at an airport to evaluate delays in the various configurations. For instance, an analysis may review:

- Primary runway direction in VFR conditions
- Secondary runway direction in VFR conditions
- Primary runway direction in IFR conditions
- Secondary runway direction in IFR conditions

Even for an airport with a single runway or pair of parallel runways, the runway is likely used in both the primary direction and the opposite or secondary direction, depending on the winds. A reduction in capacity may be due to such things as the inability to land on certain runways in IFR conditions (e.g., converging or intersecting runways) or the extra separation required between arrivals on one runway and departures on a closely spaced parallel runway. Airport configuration and where taxiways are located or connected to those runways, feeds into capacity calculations. Both runways at the Airport have full-length parallel taxiways and stub taxiways, as such; the existing configuration is used to determine existing and future capacity issues.

Runway Utilization

Runway utilization identifies when runways are used, by which aircraft, and in which runway use configuration during what wind/weather conditions. The more usability of runways during certain conditions, the higher the capacity. As discussed in the meteorological conditions section, aircraft generally desire to takeoff and land into the wind. Currently, when winds are calm, both runways are used at the Airport.

Conclusion of Runway Utilization: As shown in **Appendix G**, in all-weather and VFR conditions, winds favor Runway 6-24 in the summer months and Runway 15-33 in the winter months and during IFR conditions. Jet aircraft can typically handle stronger crosswinds than non-jet aircraft.

Aircraft Fleet Mix Index

The capacity of a runway is also dependent upon type and size of aircraft that use it as the mix of smaller to larger aircraft influences the Airport's capacity. Per FAA AC 150/5060-5, aircraft are placed into one of four weight classes (A through D) when conducting capacity analysis. These weight classes are based on the amount of wake vortex created when the aircraft passes through the air. They differ from the categories used in the determination of the AAC. Small aircraft departing behind larger aircraft must hold longer for wake turbulence separation. The greater the separation distance required, the longer the smaller aircraft must wait to depart, the longer the smaller aircraft sits on the runway, the lower the airfield's capacity.

For the purposes of capacity analysis, aircraft weight classes are shown in **Table 5-3.**

Table 5-3: Aircraft Weight Classes

Weight Class	Maximum Takeoff Weight	Aircraft Types
A	Less than or equal to 12,500 lbs.	Small wake turbulence; single engine
B	Less than or equal to 12,500 lbs.	Small wake turbulence; light twin engine
C	Greater than 12,500 lbs. up to 300,000 lbs.	Large wake turbulence; large jet and propeller aircraft
D	Greater than 300,000 lbs.	Heavy wake turbulence; large jet and propeller aircraft

Source: FAA 150/5060-5, Airport Capacity and Delay.

The fleet mix index for an airport is calculated as the percentage of weight Class C aircraft operations, plus three times the percentage of weight Class D operations (percent of C) + (3 x D).

Conclusion of Runway Aircraft Fleet Mix Index: Since there are no weight Class D aircraft forecast to use the Airport, the fleet mix index is equal to the percentage of weight Class C operations. Currently, aircraft fleet mix index is approximately 12 percent in off-peak season and approximately 19 percent during the peak season averaging out to about 14 percent annually.

Percent Arriving Aircraft

The capacity of the runway is also influenced by the percentage of aircraft arriving at the Airport during the peak hour. Arriving aircraft are typically given priority over departing aircraft; arriving aircraft generally require more time to land than departing aircraft need to takeoff. Therefore, the

higher the percentage of aircraft arrivals during peak periods of operations, the lower the ASV. Discussions with Airport personnel indicate that operational activity is well balanced between arrivals and departures.

Conclusion of Percent Arriving Aircraft: Arrivals represent 50 percent of operations during the peak period for existing and future conditions.

Percent Touch-and-Go Operations

A touch-and-go operation refers to an aircraft maneuver in which the aircraft performs a normal landing touchdown followed by an immediate takeoff, without stopping or taxiing clear of the runway. A touch-and-go is counted as two operations with minimal runway time, which increases an airport's capacity. These operations are normally associated with training and are included in the local operations figures reported by the air traffic control tower (ATCT). The Airport has restrictions in place that touch-and-go operations are prohibited between 10:00 p.m. and 6:59 a.m. local time unless prior approval is obtained by the airport manager.

Conclusion of Percent Touch-and-Go Operations: Based on historical data from the Airport and the ATCT, touch-and-go operations comprise approximately 10-15 percent of total operations at the Airport. This is anticipated to remain the same within the planning period.

Exit Taxiway Locations

A final factor in analyzing the capacity of a runway system is the ability of an aircraft to exit the runway as efficiently and safely as possible. The location, design, turning radii, and number of exit taxiways affect the length of time (occupancy time) an aircraft remains on the runway. The longer an aircraft remains on the runway, the lower the capacity of that runway.

FAA AC 150/5300-13A provides guidance regarding the number and location of exit taxiways at the Airport based on the aircraft weight class distance to those exit taxiways from the runway threshold as shown in **Table 5-4**.

100 percent of aircraft capacity weight Class A and B and 49 percent of weight Class C aircraft landing on Runway 6 can exit at Runway 24 under dry conditions using the full runway length. This increases for Runway 24 landings to closer to 75 percent of weight Class C aircraft during dry conditions. In wet conditions, less than 27 percent of weight Class C aircraft are supported on Runway 24 and approximately 12 percent of weight Class C aircraft are supported on Runway 6.

Runway 15-33 is the main runway for instrument flight rules or IFR operations. Similar to Runway 6-24, Runway 15-33 can accommodate all weight Class A and B aircraft and up to 75 percent of weight Class C aircraft in dry conditions. In wet conditions, this reduces to approximately 12 percent of weight Class C aircraft.

Table 5-4: Exit Taxiway Cumulative Utilization Percentage

Distance (Feet Threshold to Exit)	Wet Runways			Dry Runways		
	Right and Acute Angle Exits (% of aircraft observed exiting existing runways)			Right Angled Exit (% of aircraft observed exiting existing runways)		
	Aircraft Weight Class			Aircraft Weight Class		
	A	B	C	A	B	C
2,000	60	0	0	84	1	0
2,500	84	1	0	99	10	0
3,500	99	41	0	100	81	2
4,000	100	80	1	100	98	8
4,500	100	97	4	100	100	24
5,000	100	100	12	100	100	49
5,500	100	100	27	100	100	75
6,000	100	100	48	100	100	92

Weight Class A – small, single engine (<12,500 pounds)
Weight Class B – small, twin engine (<12,500 pounds)
Weight Class C – large (12,500 pounds to 300,000 pounds)
Red indicates less than 50 percent of aircraft of that weight class can exit the runway
Sources: FAA AC 150/5300-13A (Table 4-13) and McFarland Johnson, 2020.

Distances from runway thresholds to exit taxiway centerlines are shown in **Table 5-5.**

Table 5-5: Taxiway Exit Distances

	Runway 6	Runway 24	Runway 15	Runway 33
Taxiway A	N/A	5,333’	5,060’	5,060’
Taxiway A1	N/A	N/A	1,120’	3,980’
Taxiway B	3,180’	1,840’	5,060’	N/A
Taxiway C	4,970’	N/A	4,040’	1,060’
Taxiway C1	3,180’	1,840’	N/A	N/A
Taxiway D	1,460’	3,560’	2,870’	2,230’
Taxiway E	N/A	N/A	N/A	N/A

Source: McFarland Johnson, 2021.

Taxiway E was excluded from this list as aircraft would only utilize this taxiway to enter the run-up pit and not use Taxiway E as an exit taxiway.

Conclusion of Exit Taxiway Analysis: Longer runway lengths and the extension and reconfiguration of their associated taxiways, would allow the Airport to accommodate a larger percentage of weight Class C aircraft, especially in wet

PLANNING CONSIDERATION

During wet runway conditions, FAA capacity calculations suggest that only 12 percent of aircraft within weight Class C can be accommodated. With a runway extension to 6,000 feet, the Airport would be able to accommodate approximately 48 percent of weight Class C aircraft.

conditions. FAA traditional runway length recommendations can be found in Section 5.2.2. Full-length parallel taxiways to both Runways 6-24 and 15-33 are provided, which allows aircraft to exit the runway efficiently. The Airport can accommodate 12-27 percent of weight Class C aircraft in wet conditions.

Peaking Characteristics

Airline peak periods are defined in terms of peak hour operations and peak hour enplanements. GA peak periods are defined in terms of peak month and peak hour operations, with a focus on the number of aircraft accommodated on the ramp(s) at any given time.

In addition to peaking characteristics described for airline and GA activity, peaking characteristics are also influenced by annual events that occur at an airport or in the vicinity of an airport that affect air travel, vehicle, and/or aircraft parking, etc. For the purposes of this capacity calculation, the seasonality of this airport was taken into consideration.

Conclusion of Peaking Characteristics: Peak season is during the summer months (June, July, and August) and represents approximately 35 percent of annual flights. Each one of the summer months can be the peak month any given year.

Capacity Calculations

With the existing information outlined above and FAA capacity guidance, the following summarizes the key capacity analysis elements that were used for the hourly and annual capacity calculations for the Airport:

- Runway 15-33 serves as the primary IFR runway and Runway 6-24 serves as the primary VFR runway.
- In all-weather and VFR conditions, winds favor Runway 6-24 in the summer months and Runway 15-33 in the winter months and during IFR conditions.
- Aircraft fleet mix index is approximately 12 percent in off-peak season and approximately 19 percent during the peak season averaging out to about 14 percent annually.
- Arrivals represent 50 percent of operations during the peak period for existing and future conditions.
- Touch-and-go operations comprise approximately 10-15 percent of total operations at the Airport. This is anticipated to remain the same within the planning period.
- Full-length parallel taxiways to both Runways 6-24 and 15-33 are provided, which allows aircraft to exit the runway efficiently. The Airport can accommodate 12-27 percent of weight Class C aircraft in wet conditions.
- The Airport has two runway ends equipped with an ILS and necessary ATC facilities to carry out operations in a radar environment.
- There are no airspace limitations affecting runway use.[1]

FAA AC 150/5060-5 provides guidance used to calculate airfield capacity and provide planning estimates on hourly airfield capacity under both VFR and IFR conditions, which are the theoretical

[1] Airspace limitations include local Class B airspace, military airspace, etc. This does not apply at the Airport.

maximum number of aircraft operations (takeoffs and landings) that can take place on the runway system in one hour under those conditions, respectively. The various capacity elements are then consolidated into a single figure, the Airport Service Volume (ASV) for the Airport. The ASV is the theoretical maximum number of aircraft operations that the Airport can support over the course of a year.

Because characteristics of airports vary so widely, guidance in FAA AC 150/5060-5 is provided for different types of airports, from large commercial service hubs, to small single runway facilities. FAA guidance recommends that planning for capacity enhancement should begin when capacity reaches the 60 percent level.

Based on the data collected in the previous sections, using FAA guidance for runway utilization during different wind conditions and guidance from the Airport Cooperative Research Program (ACRP) Report 29, *Evaluating Airfield Capacity*, it was determined that during IFR conditions in the peak season, the Airport is approaching 80 percent of peak hour capacity and is anticipated to exceed 80 percent within the planning period as shown in **Table 5-6**. **Table 5-6** shows the results of the two runways peak/off-peak blended ASV calculation described below.

Table 5-6: Summary of Peak/Off-Peak Blended Capacities and Comparison to Operations

Year	Demand (Operations)		Capacity (Operations)			Percent Peak Hour (Operations)		Percent ASV
	Annual	Peak Hour	ASV	Hourly VFR	Hourly IFR	VFR	IFR	
2019	67,350	44	153,481	87	56	50.4%	78.6%	43.9%
2025	67,219	42	153,481	87	56	48.1%	75.0%	43.8%
2030	68,804	43	153,481	87	56	49.2%	76.8%	44.8%
2040	73,001	46	153,481	87	56	52.7%	82.1%	47.6%

Source: McFarland Johnson Analysis, 2020.

Because it was determined that during IFR conditions in the peak season, the Airport is approaching 80 percent of peak hour capacity, different annual capacities were reviewed for an appropriate assessment of the Airport's unique situation.

Single-Runway Peak Season ASV: If there were only a single runway available and operations reflected the peak season (June, July, and August) demand all year round, the ASV would be approximately 123,000 annual operations. This would result in approximately 69 percent capacity of ASV. Therefore, with capacity over 60 percent, a secondary runway at C-III designation is justified, which the Airport has.

Two Runways Peak Season ASV: During the peak season, operations reached approximately 65 percent of peak season ASV in 2019 and is forecast to reach 72 percent of peak season ASV by 2040. Therefore, with capacity over 60 percent, runway capacity enhancement should begin.

Two Runways Peak/Off-Peak Blend ASV: This capacity calculation includes seasonal variations. These figures indicate that the Airport is currently operating at 44 percent ASV. The utilization of the airfield is expected to climb to approximately 48 percent of ASV by 2040. One important thing to note is the IFR hourly capacity since it exceeds the 60 and 80 percent FAA thresholds within the

planning period. Peak hour occurs during the busy summer months, when IFR conditions are at their highest. Table 5-6 above presents a summary of the blended airfield capacity calculations compared to the current and forecast level of activity.

Summary and Recommendation for Airfield Capacity

A runway extension should be considered for one or both runways, because in wet conditions, both runways can accommodate only 12-27 percent of weight Class C aircraft. Planning for capacity enhancement measures should be considered for the primary IFR runway, which is Runway 15-33. Runway 15-33 is justified as an AAC-ADG C-III Secondary Runway for capacity for the following reasons:

PLANNING CONSIDERATION

Runway 15-33 is a justified and eligible secondary runway at C-III standards based on summer-time peak season capacity.

- The Airport exceeds the FAA threshold of 60 percent of its single runway peak season ASV, which justifies Runway 15-33 as a secondary runway.
- The top three months of IFR conditions are May (27 percent), June (25 percent), and July (21 percent), which are during the peak summer season or shoulder season (May and September). Due to prevailing winds, Runway 15 is the most favored runway end or in the favored runway use configuration for a combined ten months of the year. Therefore, Runway 15-33 is primary IFR runway.
- Runway 15 has the best instrument approach to the Airport by providing the lowest approach visibility and ceiling minimums. Therefore, Runway 15-33 is primary IFR runway.
- IFR peak hour operations were 79 percent in 2019 and are forecast to exceed 82 percent during the planning period. It is imperative Runway 15-33 remains the primary IFR runway.

5.2.2. Runway Length

A wide variety of aircraft use the Airport daily. These aircraft, both large and small, have different runway requirements. In some cases, smaller or older aircraft may require more runway length than larger aircraft with more efficient engines. A significant number of factors go into determining aircraft performance and the runway requirements that must be met for an aircraft to use a particular runway. These include (but are not limited to):

- Airport elevation: The higher the airport elevation, the lower the air density, which translates to less air circulating through the engine resulting in less power. The higher the airport elevation, the longer a runway needs to be.
- Aircraft weight: The heavier an aircraft, the longer it takes to take off or slow down. This means the heavier an aircraft (with more passengers, luggage, cargo, and/or fuel – also known as payload), the longer a runway needs to be. Aircraft flying longer distances (stage lengths) require more fuel, which results in heavier aircraft weight and longer runway needs.
- Temperature: The higher the temperature, the lower the air density, which means lower combustion and power for engines and lower drag over the wings. This means that the higher the temperature, the more runway length is needed.

- **Longitudinal slope of the runway**: If the runway slopes up, it takes longer for aircraft to take off. Similarly, if a runway slopes down, it takes longer for an aircraft to land.
- **Runway condition (dry/wet/icy/contaminated)**: A dry, clean runway is the best for landing. During rain, snow, ice, sand, dust, or other contamination, there is less traction between the wheels and the runway pavement, which results in longer runway length needed for takeoff and landing.

The FAA has published FAA AC 150/5325-4B, *Runway Length Requirements for Airport Design*, to assist in the determination of the required runway length for both the primary and crosswind runways. For airports accommodating aircraft greater than 12,500 pounds (i.e. a King Air turboprop), there are two methodologies identified. Airports that are regularly served by aircraft greater than 60,000 pounds (such as this Airport); the AC suggests using the requirements of the individually most demanding aircraft that meets the critical use threshold. In order to ensure a thorough analysis to validate the need for a longer runway, this Master Plan reviewed ***both*** methodologies and considered ***each*** of the individual aircraft greater than 60,000 pounds that regularly use the Airport to determine adequate runway length ranges based on AC methodologies.

Aircraft Weighing Between 12,500 and 60,000 Pounds (General Aviation)

For airports with predominately GA activity, the FAA has created a series of figures consisting of different groups and operating characteristics of a fleet of GA jet aircraft within the 12,500- to 60,000-pound weight class. Furthermore, these figures depict the requirements associated with operating at 60 percent useful load (the difference between maximum allowable gross weight and the operating empty weight) and 90 percent useful load. These figures are depicted in **Figure 5-1**, **Figure 5-2**, **Figure 5-3**, and **Figure 5-4**.

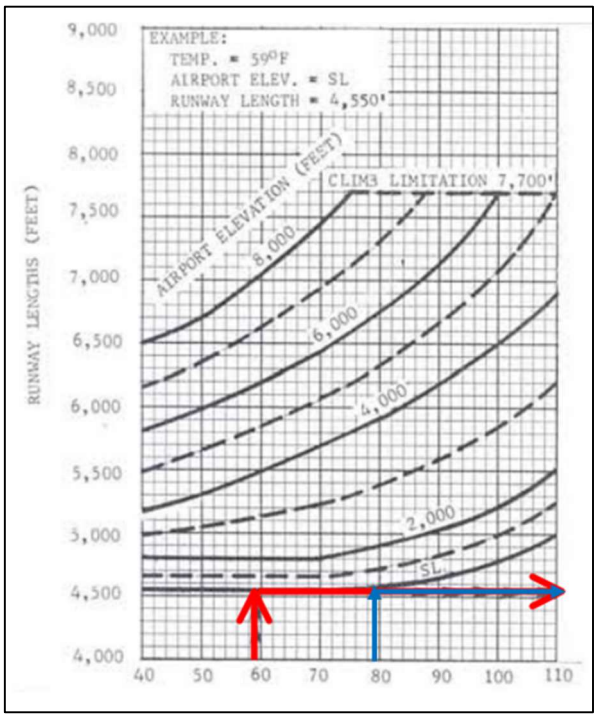
A two-week sampling of flights during the month of February (typically one of the slower months at the Airport) 2021, found there were multiple daily departures to destinations over 1,000 nautical miles (NM) from the Airport including Bozeman, Montana (2,043 NM); Houston, Texas (1,624 NM); and West Palm Beach, Florida (1,174 NM). Aircraft operating at these ranges would likely be operating closer to 90 percent of their useful load as opposed to 60 percent useful load.

Virtually all of the aircraft identified in the 75 percent of the GA fleet in AC 150/5325-4B use the Airport regularly. Aircraft identified in the 100 percent of the GA fleet such as the Bombardier Challenger 600/601/603/604, Dassault Falcon 900/2000, and Lear 45/55/60 also frequent the Airport, with aircraft within this family using the Airport daily.

Based on the data collected with the vast majority of the GA fleet (family of aircraft) using the Airport daily, the range of runway need was identified as follows:

- Average of 100 percent of GA fleet carrying 60-90 percent useful load (**Figure 5-3** and **Figure 5-4**): **6,200-foot runway length identified**.
- Average of 90 percent useful load of aircraft representing 75-100 percent of the fleet (**Figure 5-2** and **Figure 5-4**): **6,700-foot runway length identified**.
- The resulting requirement is a range of approximately **6,200 to 6,700-foot runway length identified**.

Figure 5-1: General Aviation Fleet 12,500-60,000 pounds, 75% of fleet at 60% Useful Load



LEGEND:

FAA Sample Analysis

HYA Resulting Analysis

NOTES:

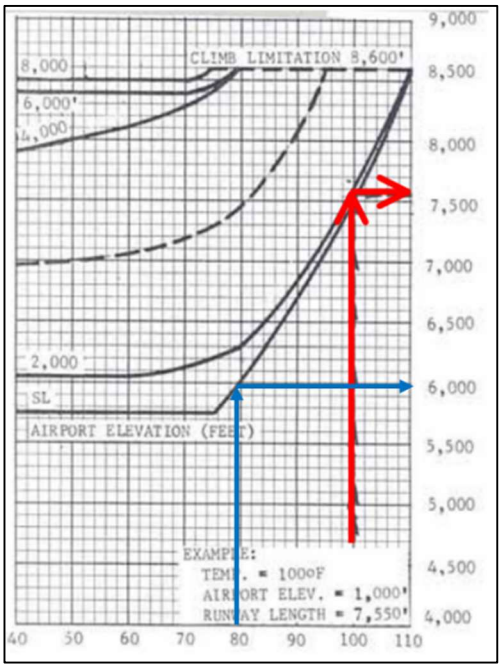
1.) Mean Daily Maximum Temperature = **79.9° F** occurring in July.

2.) Runway Length required for 75% of fleet at 60% useful load = **4,500 feet**

3.) Airport Elevation: **54.1 feet**

Sources: AC 150/5325-4B; NOAA NCDC 1981-2010 Climate Normals temperature data (Avg. Temp of Hottest Month = July – 79.9°F); McFarland Johnson analysis, 2021.

Figure 5-2: General Aviation Fleet 12,500-60,000 pounds, 75% of fleet at 90% Useful Load



LEGEND:

FAA Sample Analysis

HYA Resulting Analysis

NOTES:

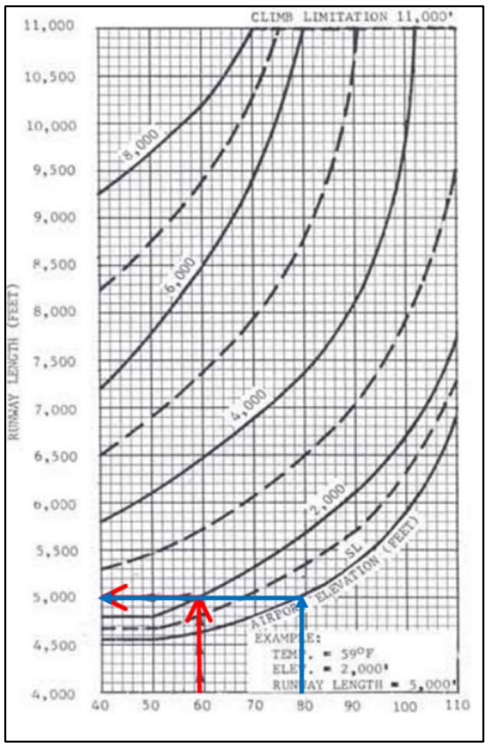
1.) Mean Daily Maximum Temperature = **79.9° F** occurring in July.

2.) Runway Length required for 75% of fleet at 90% useful load = **6,000 feet**

3.) Airport Elevation: **54.1 feet**

Sources: AC 150/5325-4B; NOAA NCDC 1981-2010 Climate Normals temperature data (Avg. Temp of Hottest Month = July – 79.9°F); McFarland Johnson analysis, 2021.

Figure 5-3: General Aviation Fleet 12,500-60,000 pounds, 100% of fleet at 60% Useful Load



LEGEND:

FAA Sample Analysis

HYA Resulting Analysis

NOTES:

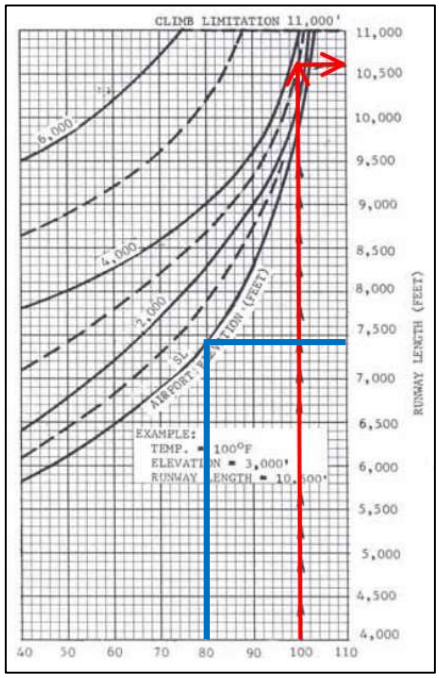
1.) Mean Daily Maximum Temperature = **79.9° F** occurring in July.

2.) Runway Length required for 75% of fleet at 90% useful load = **5,000 feet**

3.) Airport Elevation: **54.1 feet**

Sources: AC 150/5325-4B; NOAA NCDC 1981-2010 Climate Normals temperature data (Avg. Temp of Hottest Month = July – 79.9°F); McFarland Johnson analysis, 2021.

Figure 5-4: General Aviation Fleet 12,500-60,000 pounds, 100% of fleet at 90% Useful Load



LEGEND:

FAA Sample Analysis

HYA Resulting Analysis

NOTES:

1.) Mean daily Maximum Temperature = **79.9° F** occurring in July.

2.) Runway Length required for 75% of fleet at 90% useful load = **7,400 feet**

3.) Airport Elevation: **54.1 feet**

Sources: AC 150/5325-4B; NOAA NCDC 1981-2010 Climate Normals temperature data (Avg. Temp of Hottest Month = July – 79.9°F); McFarland Johnson analysis, 2021.

Aircraft Greater than 60,000 pounds (General Aviation and Commercial)

For commercial facilities like the Airport that are regularly used by aircraft weighing more than 60,000 pounds, FAA AC 150/5325-4B suggests using the requirements of an individual aircraft, typically the most demanding. However, it is also appropriate to look at a family of aircraft using a facility to ensure that you meet the demand for your "typical" fleet and for that reason, this Master Plan considers each of the aircraft within this weight class that regularly use the Airport.

Embraer 190 (Existing User) – Aircraft performance for an E190 varies depending on the weight variant, engine type, and take-off settings used. JetBlue flights are E190 AR[2], so this variant was used for existing and future calculations. For the existing flight to John F. Kennedy International Airport (JFK) at maximum payload (payload is the weight of occupants, cargo, and baggage), runway length information is shown in **Table 5-7**. It is anticipated that longer stage lengths (distance flown) may occur within the planning period. The E190 has conducted over 1,130 operations at the Airport since JetBlue launched service in 2014.

Table 5-7: Runway Length Analysis - Embraer 190 HYA to JFK

Data: The calculation will use the following design conditions:		
a.	Airplane	E190
b.	Mean daily maximum temperature of hottest month at the airport	79.9° Fahrenheit (26.6° C)
c.	Airport elevation	54.1 feet (16.5 m)
d.	Maximum design landing weight	97,003 lbs. (44,000 kg)
e.	Maximum design takeoff weight	114,199 lbs. (51,800 kg)
f.	Maximum difference in runway centerline elevations.	5.2 feet (Runway 6-24) 11.5 feet (Runway 15-33)

Results:	
Standard (MTOW) Runway Length for Takeoff Distance	6,115 feet
HYA-JFK Adjusted Runway Length for Takeoff Distance	5,290 feet

Sources: Embraer 190 Airport Planning Manual; McFarland Johnson analysis, 2021.
Notes: HYA adjusted analysis assumes payload and fuel weights that would be reflective of a typical HYA operation to an airport within the Northeast Corridor (i.e., HYA-JFK).

Additional runway requirement scenarios for longer range flights on the E190 are depicted in **Table 5-13.**

Gulfstream IV/G500 (Existing and Future User) – The Gulfstream G500 (G500) is the representative existing and future GA design aircraft. Aircraft performance for a Gulfstream V varies depending on the weight variant used. Combined with the similar variant, the Gulfstream IV, these aircraft have accounted for over 4,886 operations at the Airport since 2010. A 15 percent contamination

[2] JetBlue Airways Fleet Embraer ERJ-190 Details and Pictures, https://airlinesfleet.com/jetblue-airways-fleet-embraer-erj-190-details-and-pictures/, accessed Oct. 15, 2020.

factor is added to Part 135 operations on landing per the AC. Although origin and destination cities have varied, a typical route to/from the Airport ranges up to 1,500 NM. See **Table 5-8**.

Table 5-8: Runway Length Analysis - G500 1,500 NM Flight

Data: The calculation will use the following design conditions:		
a.	Airplane	G500
b.	Mean daily maximum temperature of hottest month at the airport	79.9° Fahrenheit (26.6° C)
c.	Airport elevation	54.1 feet (16.5 m)
d.	Maximum design landing weight	64,350 lbs. (29,189 kg)
e.	Maximum design takeoff weight	79,600 lbs. (36,106 kg)
f.	Maximum difference in runway centerline elevations.	5.2 feet (Runway 6-24) 11.5 feet (Runway 15-33)

Results:	
Standard (MTOW) Runway Length for Takeoff Distance	6,585 feet
HYA + 1,500 NM Adjusted Runway Length for Takeoff Distance	5,265 feet

Sources: Gulfstream G500 Airport Planning Manual; McFarland Johnson analysis, 2021.
Notes: HYA adjusted analysis assumes payload and fuel weights that would be reflective of a typical HYA operation to an airport within a 1,500 NM range.

Bombardier Global 5000/Express (Existing and Future User) - A similar-sized competitor to the Gulfstream V, the Bombardier Global 5000 and Global Express are also frequent Airport users within the 60,000-pound user weight class with over 734 operations at the Airport since 2010. A 15 percent contamination factor is added to Part 135 operations on landing per the AC. Although origin and destination cities have varied, a typical route to/from the Airport ranges up to 1,500 NM. See **Table 5-9**.

Table 5-9: Runway Length Analysis - Global 5000/Express 1,500 NM Flight

Data: The calculation will use the following design conditions:		
a.	Airplane	Global Express
b.	Mean daily maximum temperature of hottest month at the airport	79.9° Fahrenheit (26.6° C)
c.	Airport elevation	54.1 feet (16.5 m)
d.	Maximum design landing weight	78,600 lbs. (35,652 kg)
e.	Maximum design takeoff weight	92,500 lbs. (41,957 kg)
f.	Maximum difference in runway centerline elevations.	5.2 feet (Runway 6-24) 11.5 feet (Runway 15-33)

Results:	
Standard (MTOW) Runway Length for Takeoff Distance	6,476 feet
HYA + 1,500 NM Adjusted Runway Length for Takeoff Distance	5,180 feet

Sources: Bombardier Global 5000 Airport Planning Manual; McFarland Johnson analysis, 2021.
Notes: HYA adjusted analysis assumes payload and fuel weights that would be reflective of a typical HYA operation to an airport within a 1,500 NM range.

Airbus A220 (Future User) – Aircraft performance for an Airbus A220 (A220) varies depending on the weight variant used. The longest runway at the Airport (Runway 6-24 at 5,425 feet) accommodates takeoff weights of up to 125,000 pounds in the summer, which does not translate into any useable range due to additional fuel requirements in IFR conditions. For the existing flight to JFK at maximum payload, runway length information is shown in **Table 5-10**. It is anticipated that longer stage/flight lengths may occur within the planning period. Runway length requirements for those are shown in **Table 5-13**. JetBlue began to accept deliveries of the A220 in early 2021 and has publicly stated that this aircraft will replace the E190 on all routes by 2025.

Table 5-10: Runway Length Analysis - A220 HYA to JFK

Data: The calculation will use the following design conditions:		
a.	Airplane	A220
b.	Mean daily maximum temperature of hottest month at the airport	79.9° Fahrenheit (26.6° C)
c.	Airport elevation	54.1 feet (16.5 m)
d.	Maximum design landing weight	129,498 lbs. (58,740 kg)
e.	Maximum design takeoff weight	148,998 lbs. (67,585 kg)
f.	Maximum difference in runway centerline elevations.	5.2 feet (Runway 6-24) 11.5 feet (Runway 15-33)

Results:	
Standard (MTOW) Runway Length for Takeoff Distance	6,200 feet
HYA-JFK Adjusted Runway Length for Takeoff Distance	5,865 feet

Sources: Airbus A220-300 Airport Planning Manual, McFarland Johnson analysis, 2021.
Notes: HYA adjusted analysis assumes payload and fuel weights that would be reflective of a typical HYA operation to an airport within the Northeast Corridor (i.e., HYA-JFK).

Since 2010, there have been nearly 7,000 operations on aircraft over 60,000 pounds. The existing commercial and GA design aircraft are the E190 and Gulfstream V/G500, respectively. The future commercial design aircraft for the Airport is the A220. The existing and proposed design aircraft should be reviewed on an individual basis per FAA AC 150/5325-4B. Additional aircraft were reviewed due to their existing use of the Airport as well as for planning purposes. In the current uncertain times of the COVID-19 pandemic, airlines are retiring portions of their fleet earlier than originally planned. This may result in Airbus A320 (A320) operations at the Airport when the E190 retires, if the A220 aircraft are not already in use for the HYA-JFK route. **Table 5-11** shows the FAA standard runway length analysis for the aircraft identified in this Master Plan at MTOW and MLW, which is consistent with the guidance in the FAA Runway Length AC and shown in **Appendix H**.

Table 5-11: FAA Standard Runway Length Analysis at MTOW and MLW

	Takeoff (feet)	Landing (feet)
E190 AR (commercial)	6,115 – 8,915	4,655 – 5,175
G500 (GA)[1]	6,585 – 6,585	3,100 – 4,100
Global Express (GA)[2]	5,540 – 6,540	2,670 – 3,670
A220 (commercial)	6,200 – 9,415	4,950 – 5,950
A320 (commercial)	5,515 – 7,515	5,290 – 5,635

[1]This aircraft also represents the GIV and G650 which would be expected to have similar performance.
[2]This aircraft also represents the Global 5000 which would be expected to have similar performance.
Sources: FAA AC 150/5325-4B; Gulfstream GV Planning Manual; Gulfstream.com; GlobalAir.com; Embraer 190 Planning Manual; Airbus A320 Planning Manual; McFarland Johnson analysis, 2021.

Since existing and proposed routes do not necessarily use MTOW and MLW, the following is a more specific analysis of runway length needs at the Airport. As shown in **Table 5-12**, it is anticipated that with the future design aircraft and the existing fleet of GA aircraft already using the facility, the existing runway length will need to increase to accommodate the mix of aircraft.

Table 5-12: HYA-Based Runway Length Analysis

	HYA Adjusted Takeoff Length (feet)
E190 (Commercial HYA-JFK)	5,290
G500 (GA 1,000 NM)[1]	6,054
Global Express (GA 1,000 NM)[2]	5,958
A220 (Commercial HYA-JFK)	5,865
A320 (Commercial HYA-JFK)	6,000

[1]This aircraft also represents the GIV and G650 which would be expected to have similar performance.
[2]This aircraft also represents the Global 5000 which would be expected to have similar performance.
Sources: Embraer 190 Airport Planning Manual; Airbus A220-300 Airport Planning Manual; Airbus A320 Airport Planning Manual; Gulfstream V Planning Manual; Gulfstream.com; GlobalAir.com; McFarland Johnson Analysis, 2020.

Forecast Scenario Considerations

In addition to the aircraft above that represent both existing the future users, this Master Plan considers forecast scenarios as identified in the forecast chapter. These forecast scenarios largely considered regional airline service and/or less than daily ultra-low-cost carriers (ULCCs). The aircraft associated with these scenarios are as follows:

Embraer 175 (Forecast Scenario) – The Embraer 175 (E175) is widely used by regional air carriers operating under brands such as Delta Connection, American Eagle, and United Express. At full load, the aircraft can carry up to 76 passengers, and approximately 5,515 feet or runway would be required for takeoff assuming the aircraft was carrying a payload respective of a short regional

flight, such as Washington D.C. which is 350 NM from the Airport. Additional runway requirements are depicted in **Table 5-13**.

Bombardier CRJ-700 (Forecast Scenario) – Similar to the E175, the Bombardier CRJ-700 (CRJ-700) is another popular short- to medium-range twin engine jet in wide use by U.S. regional airline carriers. The CRJ-700 has very similar performance to the E175 and can seat 66-70 passengers in certain configurations. Runway requirements for the CRJ-700 are depicted in **Table 5-13**.

Table 5-13: Forecast Scenario Runway Requirements

Common Origin/Destination Airports	Takeoff (feet)[1]	Landing (feet)[1]
CRJ-700 – Atlanta	5,915	5,980
CRJ-700 – DC	5,215	5,980
E175 – Atlanta	7,615	5,290
E175 – DC	5,515	5,290
E190 – Atlanta	7,665	5,175
E190 – DC	6,315	5,175
A220 – Atlanta	6,365	5,578
A220 – DC	5,965	5,578
A320 – JFK	5,015	5,520
A320 – Orlando	6,015	6,325
A320 – Ft. Myers	6,115	6,383

[1] Distances are shown at sea level and during standard atmospheric conditions. Takeoff distances are longer on a hot, summer day. These are adjusted for runway slope and wet runways.
Sources: CRJ-700 Planning Manual, Embraer 175 Planning Manual, Embraer 190 Planning Manual, Airbus A220 Planning Manual, Dassault Falcon 900 Planning Manual, Jet Advisors (accessed May 14, 2020), McFarland Johnson analysis, 2020.

Airbus A320 (Forecast Scenario) – In light of the Covid-19 pandemic, JetBlue may retire its E190 aircraft sooner than originally planned. It is prudent that the Airport plans for A320 service, so that it does not lose its ability to offer airline service by an existing operator. Aircraft performance for an A320 varies depending on weight variant used. At full passenger load (150 passengers), approximately 6,115 feet of runway would be required for takeoff. For the existing flight to JFK at maximum payload, runway length information is shown in **Table 5-12**. It is anticipated that longer stage lengths may occur within the planning period. Runway length requirements for those are shown in **Table 5-13**. It should be noted

QUALITATIVE PERSPECTIVE

Year-Round Residents: Live Where You Work; Work Where You Live

Year-round service would allow people to fly in and out of the Airport instead of driving to Boston or Providence. A longer runway would support year-round service. This could result in:

- Reducing car congestion/traffic
- Potential for alternate modes of transportation – consideration for a multi-modal center

PLANNING CONSIDERATION

Both GA and commercial runway length analyses support a runway extension.

that most airlines using the A320 will not consider flying into an airport that does not have a 6,000-foot-long runway.

Additionally, the following aircraft were reviewed for certain scenarios to account for potential changes at the Airport. The CRJ-700 and E175 were reviewed for a stage length of approximately 350 NM, for example to Washington D.C, and 825 NM, for example to Atlanta, common origin/destination airports from the northeast region. This is shown in **Table 5-13**.

Per H.R.302 -FAA Reauthorization Act of 2018, Section 47106 of title 49 of the United States Code, "When evaluating the master plan of an airport […], the Secretary shall take into account (1) the role and airport plays with respect to medical emergencies and evacuations; and (2) the role the airport plays in emergency or disaster preparedness in the community served by the airport."[3]

For the entire Cape, HYA is the only public airport with runways that exceed 5,000 feet. In the case of an emergency that requires evacuations of large portions of the population, the Airport will play a key role in evacuations. For these purposes, aircraft similar to Boeing 737/A320-type aircraft should be considered. Generally, these have takeoff distances around 6,400 feet.

Recommendation for Runway Length: Based on the analysis of existing general aviation fleet mix as well as each of the individual aircraft greater than 60,000 pounds that regularly use the Airport, planning for a runway with a length of between 6,000 and 6,400 feet would be considered reasonable based on the guidance outlined in FAA AC 150/5325-4B, *Runway Length Requirements for Airport Design*. In addition to this recommendation being the requirement for existing and future users, it is also consistent with the forecast scenarios identified in the forecast chapter; the requirements for the forecast scenarios do not change this recommendation.

PLANNING CONSIDERATION

Previous studies have presented an option to extend Runway 15-33 to between 6,325 and 7,119 feet. Multiple discussions on the need for a longer runway have occurred over the past 20 years. The 2008 Airport Layout Plan depicted a 926-foot extension to Runway 15-33.

This Master Plan revalidates the need for a runway extension based on existing GA and commercial aircraft operating at HYA and anticipated changing aircraft fleet mix.

While the AC suggests that this requirement be applicable to both runways, being cognizant of the physical requirements that will be further detailed in the alternatives chapter, the secondary

[3] https://www.congress.gov/115/plaws/publ254/PLAW-115publ254.pdf

runway length requirement for the runway not extended is 5,500 feet based on accommodating the full general aviation fleet in wet conditions. This runway should also meet RDC-C-III standards.

PLANNING CONSIDERATION

A Runway 15-33 extension could alleviate and help offset capacity challenges at Nantucket Memorial and Martha's Vineyard Airports.

5.2.3. Runway Width

Runways 6-24 and 15-33 are both 150 feet wide. C-III runways have standard width of 100 to 150 feet, depending on the MTOW. For airplanes with MTOW of 150,000 pounds or less, the standard runway width is 100 feet. For airplanes with MTOW of greater than 150,000 pounds, the standard runway width is 150 feet. The current critical aircraft (E190) is being phased out of the North American market by most operators. Two airlines have already retired their Embraer fleet, the largest Embraer operator (JetBlue) is in the process of retiring its fleet and replacing it with the A220, which has a MTOW greater than 150,000 pounds. Both runways meet and should continue to meet FAA standards for C-III runways for greater than 150,000 pounds.

Recommendation for Runway Width: No changes are recommended for Runways 6-24 and 15-33.

PLANNING CONSIDERATION

Should Runway 15-33 not be extended, Runway 6-24 may need to be strengthened to accommodate the design aircraft.

5.2.4. Runway Strength and Condition

Runway Pavement Strength

Pavement strength requirements are related to three primary factors: 1) the weight of aircraft anticipated to use an airport, 2) the landing gear type and geometry of the gear, and 3) the volume of aircraft operations. Airport pavement design, however, is not predicated on a particular weight that is not to be exceeded.

QUALITATIVE PERSPECTIVE

Maintaining two runways at C-III standards allows jet aircraft to use either runway based on wind speed and direction, which keeps a balanced field. The balanced field means no neighborhood is disproportionately impacted.

The Pavement Classification Number (PCN) expresses the load-carrying capacity of a pavement for unrestricted operations[4]. This number is compared to the Aircraft Classification Number (ACN), which is unique to each aircraft, its weight, number of tires, tire pressure, and other factors. The ACN should remain below the PCN to prevent excessive wear and prolong the pavement's useable life. **Table 5-14** shows an ACN and PCN comparison for the Airport.

[4] For information on different components of the PCN, visit: https://www.skybrary.aero/index.php/Pavement_Classification_Number_(PCN).

Table 5-14: Pavement Strength Review

	ACN	Runway 6-24 PCN	Runway 15-33 PCN	Runway Strength Needed
E190	17-27	32/F/A/X/T	43/F/A/X/T	None
A320	19-42	32/F/A/X/T	43/F/A/X/T	Potential Runway 6-24
A220	15.5-31.8	32/F/A/X/T	43/F/A/X/T	None
Gulfstream GV/G500	12-28	32/F/A/X/T	43/F/A/X/T	None

Note: F – Flexible, A – High Strength, X – High Pressure, T – Technical Evaluation; For more details see MassDOT Aeronautics PCI map: https://idea.appliedpavement.com/hosting/massachusetts/airport-details/airport-details.html.

Sources: Embraer 190 Airport Planning Manual, 2013; https://www.grad.unizg.hr/_download/repository/2_acn-tablica.pdf, accessed May 14, 2020; Airbus A220 Airport Planning Manual, 2020; McFarland Johnson analysis, 2020.

Recommendation for Runway Pavement Strength: Runway 6-24 is anticipated to be reconstructed within the planning period (by 2040). Additional recommendations may be made as the result of the 2020 state pavement management study.

Runway Pavement Condition

Massachusetts Department of Transportation (MassDOT) Aeronautics started a new pavement condition index (PCI) update project for 2020. The PCI scale indicates that pavement with a PCI of:

- 71-100 should receive preventative maintenance,
- 41-70 should receive major rehabilitation, and
- 0-40 should be reconstructed.

The most current published 2016[5] showed Runway 15-33 at a PCI between 47 and 64. Runway 15-33 was reconstructed in 2017. Runway 6-24 at a PCI between 30 and 70. Runway 6-24 is due to be rehabilitated in the short-term.

Recommendation for Runway Pavement Condition: The Airport should continue its pavement management plan. Any pavement condition with a PCI rating of 40 or less should be rehabilitated/reconstructed in the short-term. Pavement assessed as 41-70 should be rehabilitated within the planning period.

5.2.5. Runway Orientation

A significant factor in evaluating a runway's orientation is the direction and velocity of the prevailing winds. Ideally, all aircraft take off and land in the direction of the wind. A runway

[5] MassDOT Aeronautics PCI map, accessed April 9, 2021 <https://idea.appliedpavement.com/hosting/massachusetts/airport-details/airport-details.html>.

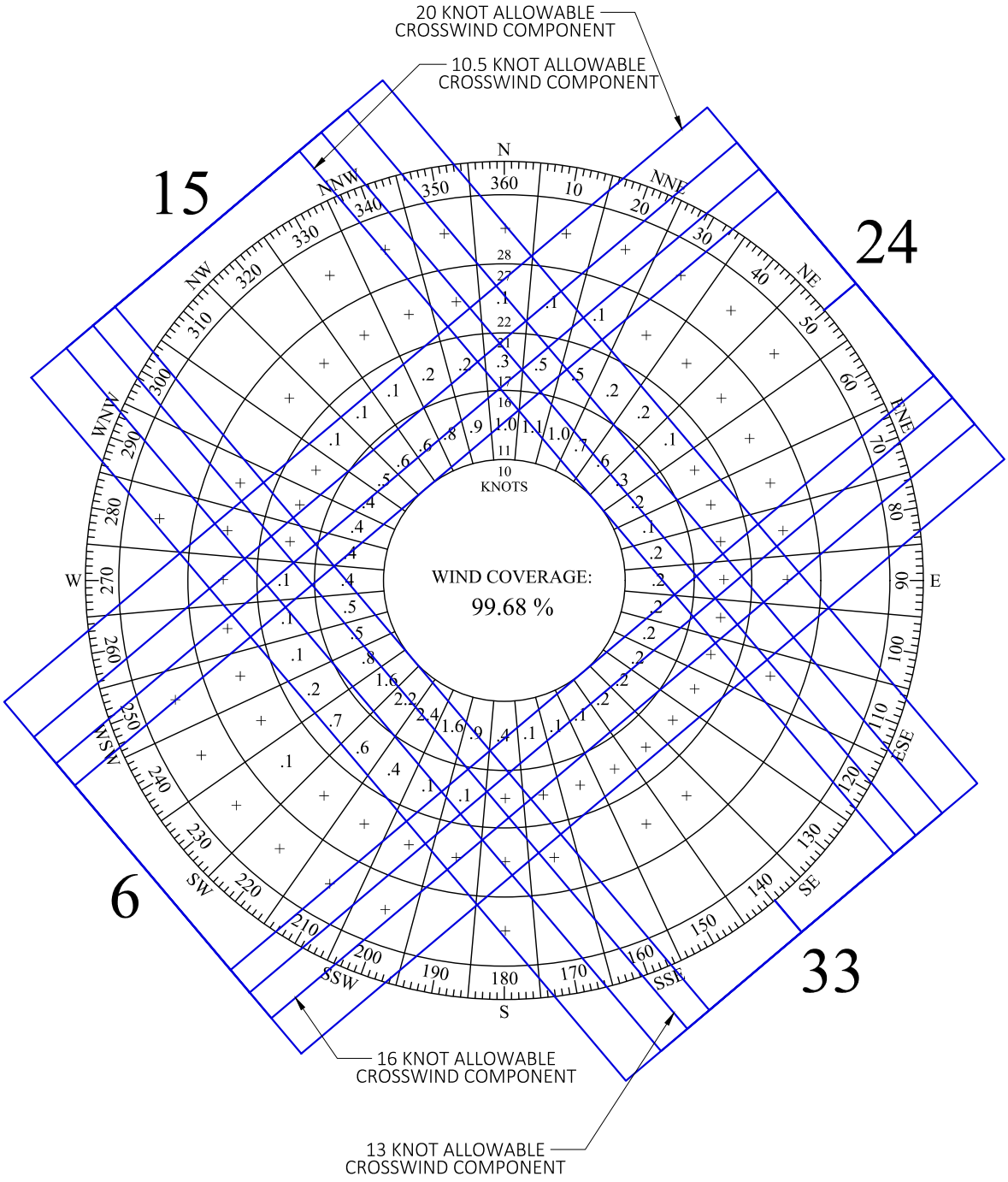
alignment that does not allow an aircraft to go directly into the wind creates what is known as a crosswind component (i.e. winds at an angle to the runway in use), which makes it more difficult for a pilot to guide the airplane down the intended path. The commonly used measure of degree to which a runway is aligned with the prevailing wind conditions is the wind coverage percentage, which is the percent of time crosswind components are below an acceptable velocity. Essentially, this measure indicates the percentage of time aircraft within a particular design group will be able to safely use the runway. Current FAA standards recommend that airfields provide 95 percent wind coverage.

Runway wind coverage varies month to month at the Airport. Wind data for the Airport was obtained from NOAA. The wind data was collected for a 10-year period from 2010 through 2019 at the Airport, and was compiled into all weather, IFR, and VFR wind roses presented in **Figure 5-5**, **Figure 5-6**, and **Figure 5-7** respectively. The RDC of C-III coverage is shown by the 16-knot coverage percentages.

The wind roses show the percentage of time winds at the Airport originated from different directions at various velocities. These percentages were then analyzed based on a monthly basis and for individual runway orientations. All weather, IFR, and VFR percentages are shown in **Table 5-15**, **Table 5-16**, and **Table 5-17**, respectively. Ideally, the primary instrument runway at an airport should be the runway that has the highest percentage of wind coverage under IFR conditions, during which an approach procedure is needed.

According to the monthly wind analysis, Runway 6-24 does not meet the FAA required minimum 95 percent wind coverage for 10.5 or 13 knots in any weather conditions. Therefore, a crosswind runway is necessary. Runway 15 has the best IFR approach at the Airport. During the summer months, when the Airport is at its peak of operations, Runway 15 is the favored runway end during IFR conditions. Throughout the months with the highest percentage of IFR wind conditions, Runway 15 is the single most used runway end due to prevailing winds. From 2010 to 2019, IFR operations accounted for approximately 18.9 percent of the total number of annual operations. Runway 15, the primary instrument runway, accounted for an average of 8,082 operations per year. This equates to approximately 47.1 percent of all IFR operations and 8.9 percent of total annual operations.

Figure 5-5: HYA All Weather Wind Rose



ALL WEATHER				
	10.5kt	13kt	16kt	20kt
RUNWAY 6-24	89.54%	94.24%	97.95%	99.38%
RUNWAY 15-33	78.85%	86.12%	93.33%	97.35%
COMBINED	97.19%	98.95%	99.68%	99.95%

Source: https://www7.ncdc.noaa.gov/CDO/cdoselect.cmd

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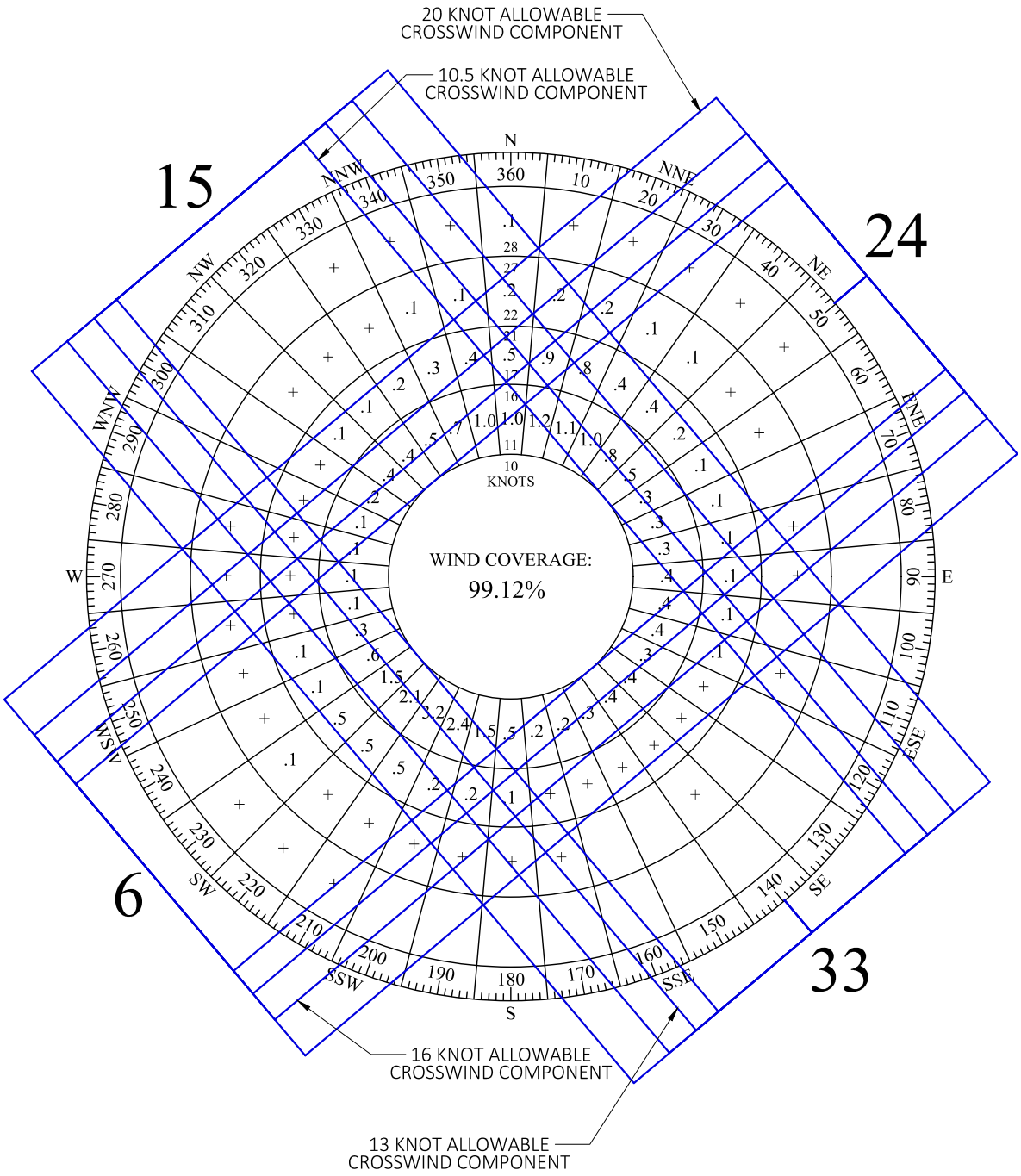
Figure 5-6: HYA IFR Wind Rose



IFR				
	10.5kt	13kt	16kt	20kt
RUNWAY 6-24	86.43%	91.94%	96.43%	98.65%
RUNWAY 15-33	72.35%	81.64%	90.88%	96.39%
COMBINED	94.55%	97.54%	99.12%	99.83%

Source: https://www7.ncdc.noaa.gov/CDO/cdoselect.cmd

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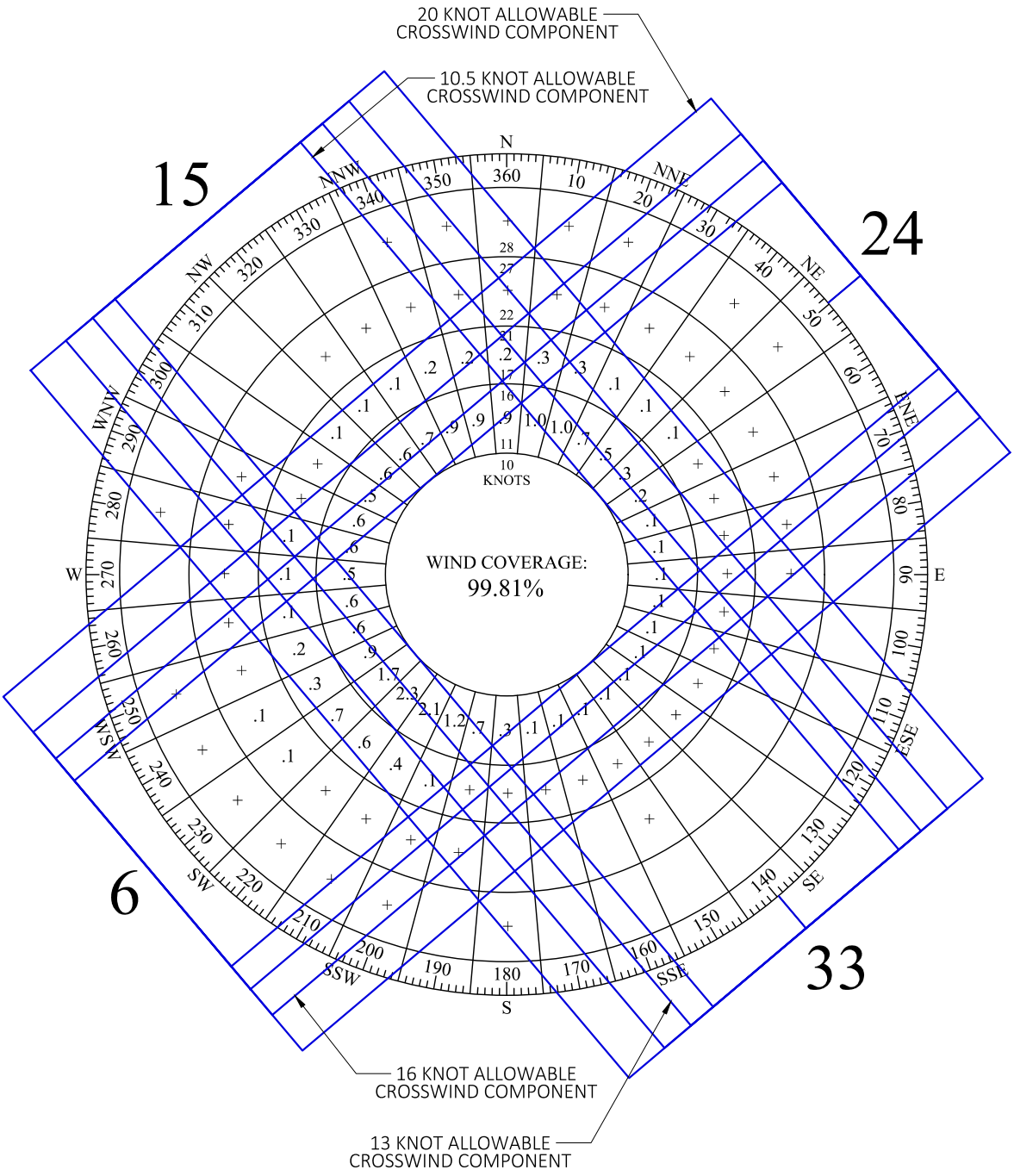
Figure 5-7: HYA VFR Wind Rose



VFR				
	10.5kt	13kt	16kt	20kt
RUNWAY 6-24	90.26%	94.78%	98.30%	99.56%
RUNWAY 15-33	80.36%	87.28%	93.90%	97.57%
COMBINED	97.81%	99.27%	99.81%	99.98%

Source: https://www7.ncdc.noaa.gov/CDO/cdoselect.cmd

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Table 5-15: All Weather[1] Runway Wind Coverage Analysis

RWY	10.5 knots			13 knots			16 knots		
	15-33	6-24	Both	15-33	6-24	Both	15-33	6-24	Both
Jan.	79.71%	83.31%	94.64%	85.95%	90.20%	97.64%	92.09%	96.61%	99.32%
Feb.	81.53%	82.69%	95.48%	88.02%	89.36%	98.09%	93.73%	95.23%	99.44%
Mar.	80.33%	80.32%	92.55%	88.55%	88.55%	96.80%	95.66%	95.65%	99.11%
Apr.	75.37%	87.33%	96.06%	84.17%	93.45%	98.79%	92.27%	97.81%	99.80%
May	78.34%	93.56%	97.75%	85.90%	97.11%	99.44%	93.62%	99.41%	99.89%
Jun.	79.44%	94.26%	98.58%	87.34%	97.50%	99.77%	94.84%	99.57%	99.97%
Jul.	77.59%	97.17%	99.24%	86.14%	98.99%	99.83%	94.74%	99.80%	99.94%
Aug.	80.17%	97.20%	99.26%	87.46%	98.92%	99.84%	95.09%	99.78%	99.94%
Sep.	78.90%	95.09%	98.22%	86.97%	97.83%	99.40%	94.98%	99.43%	99.85%
Oct.	77.06%	91.01%	97.13%	84.18%	94.96%	98.90%	91.30%	98.08%	99.68%
Nov.	78.22%	85.87%	95.19%	85.41%	91.74%	98.01%	92.33%	96.85%	99.44%
Dec.	84.88%	86.53%	96.70%	90.42%	92.25%	98.85%	95.04%	97.09%	99.77%

[1] All Weather Conditions: all cloud ceiling and visibility conditions

Less than FAA required 95%; Equal to or greater than FAA required 95%

Sources: NOAA, 2010-2019; McFarland Johnson analysis, 2020.

Table 5-16: IFR[1] Runway Wind Coverage Analysis

RWY	10.5 knots			13 knots			16 knots		
	15-33	6-24	Both	15-33	6-24	Both	15-33	6-24	Both
Jan.	67.52%	74.17%	87.23%	76.45%	82.44%	93.16%	85.40%	90.59%	97.22%
Feb.	71.55%	77.76%	91.29%	80.64%	84.70%	95.24%	89.85%	91.14%	98.04%
Mar.	62.26%	69.33%	85.20%	71.73%	81.83%	95.24%	81.84%	92.91%	97.36%
Apr.	67.47%	84.16%	95.86%	78.73%	90.84%	99.00%	89.34%	96.18%	99.95%
May	80.44%	93.26%	97.58%	87.57%	96.97%	99.11%	94.68%	99.33%	99.76%
Jun.	77.48%	93.04%	98.45%	86.75%	97.01%	99.62%	95.30%	99.48%	99.91%
Jul.	73.33%	96.42%	98.72%	84.55%	98.43%	99.55%	95.18%	99.48%	99.85%
Aug.	76.57%	96.29%	99.07%	85.28%	98.35%	99.84%	94.41%	99.77%	100.00%
Sep.	73.48%	93.32%	96.31%	83.22%	96.73%	98.57%	93.75%	98.89%	99.64%
Oct.	68.93%	90.40%	96.33%	79.46%	94.56%	98.66%	89.63%	97.51%	99.42%
Nov.	67.63%	80.64%	89.62%	76.64%	87.84%	94.52%	86.76%	94.14%	97.80%
Dec.	74.51%	83.48%	95.57%	82.85%	89.83%	98.51%	90.24%	95.49%	99.68%

[1] IFR Weather Conditions: cloud ceiling less than 1,000 feet and/or visibility below three statue miles

Less than FAA required 95%; Equal to or greater than FAA required 95%

Sources: NOAA, 2010-2019; McFarland Johnson analysis, 2020.

Table 5-17: VFR[1] Runway Wind Coverage Analysis

RWY	10.5 knots			13 knots			16 knots		
	15-33	6-24	Both	15-33	6-24	Both	15-33	6-24	Both
Jan.	82.45%	85.36%	97.28%	88.09%	91.94%	99.07%	93.60%	97.96%	99.79%
Feb.	84.07%	83.95%	97.39%	89.90%	90.55%	99.18%	94.72%	96.27%	99.80%
Mar.	77.72%	82.72%	95.40%	85.02%	90.02%	98.23%	91.81%	96.25%	99.50%
Apr.	77.39%	88.14%	96.76%	85.56%	94.12%	98.93%	93.02%	98.23%	99.76%
May	77.50%	93.68%	98.24%	85.27%	97.16%	99.57%	93.19%	99.44%	99.95%
Jun.	80.05%	94.64%	98.88%	87.53%	97.65%	99.82%	94.69%	99.60%	99.99%
Jul.	78.56%	97.34%	99.36%	86.50%	99.12%	99.89%	94.63%	99.88%	99.97%
Aug.	80.80%	97.36%	99.29%	87.84%	99.02%	99.84%	95.21%	99.78%	99.93%
Sep.	80.11%	95.49%	98.64%	87.80%	98.07%	99.58%	95.25%	99.55%	99.90%
Oct.	78.61%	91.14%	97.95%	85.08%	95.05%	99.20%	91.63%	98.19%	99.73%
Nov.	79.67%	86.59%	96.97%	86.61%	92.27%	98.91%	93.09%	97.22%	99.67%
Dec.	87.12%	87.19%	97.63%	92.06%	92.77%	99.17%	96.07%	97.44%	99.79%

[1] VFR Weather Conditions: cloud ceilings equal to or greater than 1,000 feet and visibility equal to or greater than three statute miles

Less than FAA required 95%; Equal to or greater than FAA required 95%

Sources: NOAA, 2010-2019; McFarland Johnson analysis, 2020.

Further review of the data shows that one single runway is not the favored runway. **Appendix G** shows the breakdown of wind coverage by runway end. This analysis shows that Runways 24 and 33 are typically the two favored runway ends during all weather and VFR conditions. However, the favored runway ends during IFR conditions vary between Runway 6, 15, and 24 depending on wind speed. At higher wind speeds during peak season, Runway 15 is the favored runway. Runway 15 was favored from April through September. Peak month operations at the Airport account for approximately 11.5 percent of the total operations at the Airport. During the summer season, JetBlue operates its C-III aircraft out of the Airport. Due to prevailing winds, Runway 15 is the favored runway end during IFR conditions for larger aircraft in the summer season, when JetBlue is operating; it would be appropriate to extend Runway 15-33 during the planning period. Annual wind coverage percentage is shown in **Table 5-18.**

Table 5-18: Annual Wind Coverage

All-Weather				
	10.5	13	16	20
Runway 6-24	89.54%	94.24%	97.95%	99.38%
Runway 15-33	78.85%	86.21%	93.33%	97.35%
Combined	97.19%	98.95%	99.68%	99.95%

IFR				
	10.5	13	16	20
Runway 6-24	86.43%	91.94%	96.43%	98.65%
Runway 15-33	72.35%	81.64%	90.88%	96.39%
Combined	94.55%	97.54%	99.12%	99.83%

	VFR			
	10.5	13	16	20
Runway 6-24	90.26%	94.78%	98.30%	99.56%
Runway 15-33	80.36%	87.28%	93.90%	97.57%
Combined	97.81%	99.27%	99.81%	99.98%

Sources: NOAA, 2010-2019; McFarland Johnson analysis, 2020.

Summary and Recommendation for Runway Orientation:

- Wind coverage for Runway 6-24 does not meet 95 percent wind coverage for all weather, IFR, or VFR conditions at 10.5 knots or 13 knots.
- A crosswind runway is justified for 10.5 and 13 knots for any weather conditions.
- Based on Section 5.2.1, Runway 15-33 is justified as a C -III Secondary Runway.
- Runway 15-33 accounts for approximately 53 percent of all IFR operations and is considered the primary IFR runway.
- Maintain both Runways 6-24 and 15-33 in their current orientation and as C-III runways.

5.2.6. Runway Safety Areas

Runway safety areas (RSAs) are defined by the FAA as surfaces surrounding a runway that are prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. RSAs consist of a relatively flat graded area free of man-made and natural obstructions that could damage aircraft. According to FAA guidance, the RSA should be capable, under dry conditions, of supporting aircraft rescue and firefighting (ARFF) equipment, and the occasional passage of aircraft without causing structural damage to the aircraft. The FAA design standards for RSAs surrounding runways serving C-III aircraft (both runways) is a width of 500 feet, a length that extends 600 feet prior to the landing threshold, and a length that extends 1,000 feet beyond the runway end. These are shown visually in Figure 5-8.

There is an existing RSA determination in place for both Runways 6-24 and 15-33 that was approved on September 13, 2000. This RSA determination noted that upgrading the RSA to the Runway 33 end was deemed not feasible. In order to create a standard RSA, the Airport would need to purchase property, relocate public roads, relocate utilities and parking lots, purchase and demolish existing structures, grade terrain, and replace some objects with frangible objects (including wind cones and potentially glide slopes). Since this determination, an engineered materials arresting system (EMAS) was constructed at the Runway 6 end, resolving the RSA standards for that runway end. An EMAS is a bed of engineered materials built at the end of a runway to reduce the severity of the consequences of a runway overrun. This is similar to a truck overrun area off a highway. Mitigation efforts to address the Airport perimeter road have also been performed by providing signage to inform vehicles that the road is entering into the RSAs. The RSA determination and Modifications of Design Standards (MOS) at the Airport are summarized in Table 5-19. All MOS can be found in Appendix I.

As part of any planning study, a review of incremental improvements to RSAs needs to be made. Table 5-20 shows what areas of a full dimension RSA would be non-standard.

Table 5-19: RSA Determination and Modifications of Design Standards

MOS No.	Summary	Approved	Active
N/A	Runways 15-33 and 6-24 RSA Determination	09/13/00	Yes
28	Maximum Runway Edge Light Spacing	01/10/78	No
34	Radio Control of Runway Edge Lights with ALSF-1 Lighted During Hours of Control Tower Closure	02/16/78	Yes
88	Runway 15 Runway-Runway Intersection Sign Installed 325' From Runway 6-24	09/18/89	Yes
90	Taxiway Holding Locations	07/11/84	No
93	Clearing of Transitional Surface (Runway 15-33)	03/15/91	Yes
101	Penetrations of Primary Surface for Runway 6-24	07/16/93	Yes
106	Reduced Runway/Taxiway Separation Distance between Runway 15-33 and Taxiway A	08/17/98	No

N/A – Not applicable
Source: Cape Cod Gateway Airport, 2019.

Declared distances, which are defined by FAA AC 150/5300-13A as "maximum distances available and suitable for meeting takeoff, rejected takeoff, and landing distances performance requirements for turbine powered aircraft", may be used to obtain additional RSA and/or runway object free area (ROFA), to mitigate incompatible land uses in the runway protection zone (RPZ), to meet runway approach and/or departure surface clearance requirements, or to mitigate environmental impacts. When an EMAS is installed, all runways of an airport will have published declared distances. Both runways have published declared distances, as shown in **Table 5-21**.

Table 5-20: Full Dimension RSA Non-Standard Conditions

Location	Penetration
South Corner of Runway 33	Two Buildings not owned by the Airport
Runway 15-33	Terrain
Northeast Side of Runway 24	Yarmouth Road, Airport Perimeter Fence, Railroad Tracks, Buildings
Runway 6-24	Terrain

Source: McFarland Johnson Analysis, 2020.

Table 5-21: Declared Distances

Runway	6/24 (feet)	15/33 (feet)
Takeoff Run Available (TORA)	5,425 / 5,425	5,253 / 5,253
Takeoff Distance Available (TODA)	5,425 / 5,425	5,253 / 5,253
Accelerate-stop Distance Available (ASDA)	5,425 / 5,425	5,253 / 5,253
Landing Distance Available (LDA)	5,019 / 5,425	5,253 / 5,103

Source: FAA Form 5010-1, effective 2/27/2020 (viewed 3/23/2020).

Recommendation for Runway Safety Areas: The Airport should control full dimension RSAs through ownership whenever possible or review for incremental improvements with RSAs with equivalent levels of safety.

5.2.7. Runway Object Free Areas

In addition to the RSA, a Runway Object Free Area (ROFA) is also centered around runways to enhance the safety of aircraft operations. The FAA defines ROFAs as an area cleared of all objects except those that are related to navigational aids and aircraft ground maneuvering. However, unlike the RSA, there is no requirement to support an aircraft or emergency response vehicles.

FAA design standards for ROFAs surrounding runways serving AAC-ADG C-III aircraft are a width of 800 feet, a length that extends 600 feet prior to the landing threshold, and a length that extends 1,000 feet beyond the runway end as shown in **Figure 5-8**. ROFAs and objects within it should be at or below the nearest RSA elevation.

There are multiple penetrations to both ROFAs. ROFA penetrations are listed in **Table 5-22** and can be seen in **Figure 5-8**. According to Order 5300.1G, *Modifications to Agency Airport Design, Construction, and Equipment Standards*, MOS need to be updated every five years. The existing MOS's can be seen in **Table 5-19** and found in **Appendix I**.

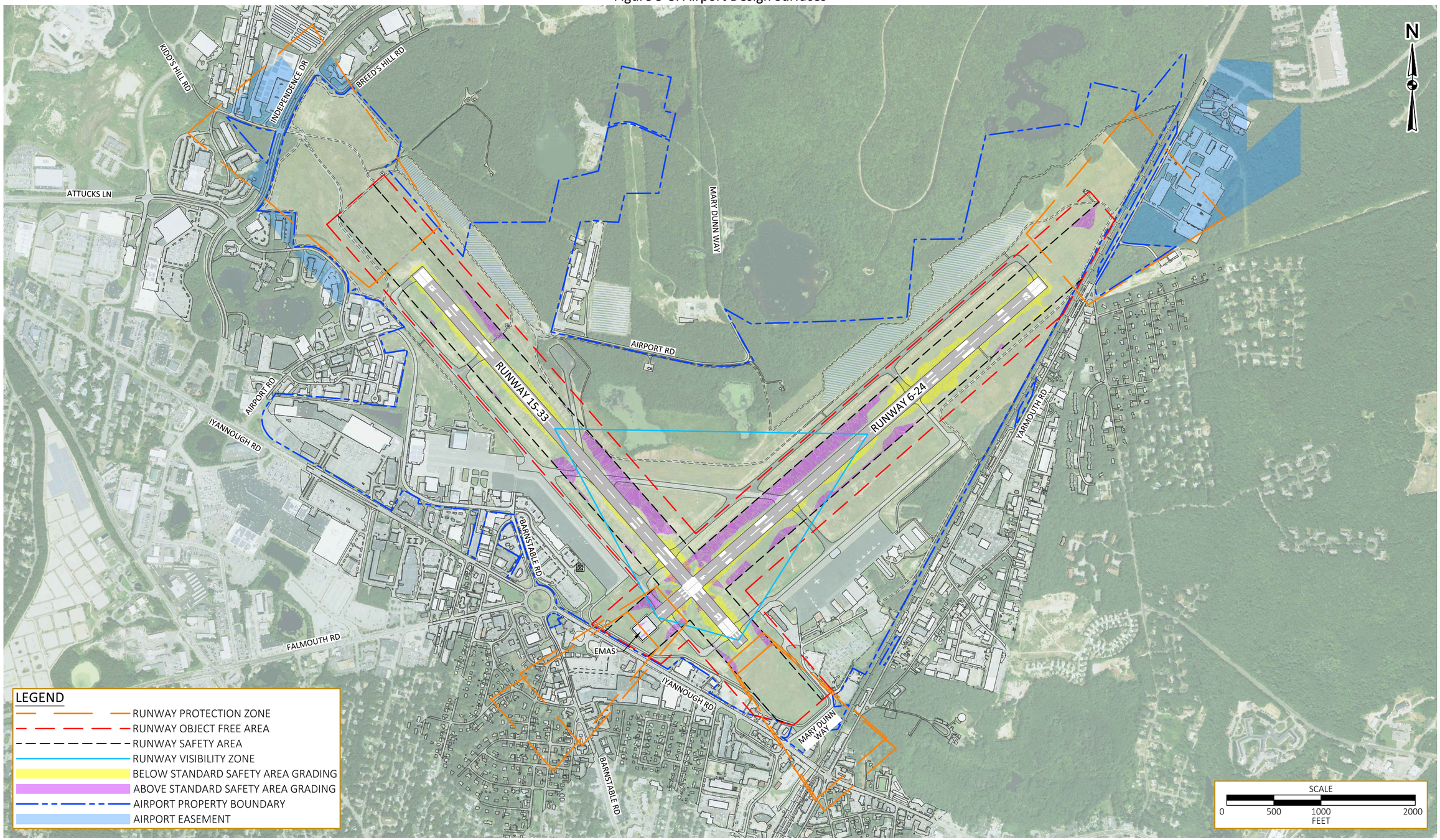
Table 5-22: ROFA Penetrations

Location	Penetration
Runway 33 End	Iyannough Road, Mary Dunn Way, four off-Airport buildings, Airport perimeter fence, ARFF/Maintenance/SRE Ramp;
Runway 24 End	Yarmouth Road, railroad tracks, Airport perimeter fence
Runway 15	Glideslope, runway visual range (RVR), wind cone
Runway 15-33 along the side of the runway	Distance measuring equipment (DME), precision approach path indicator (PAPI) power and control units
Runway 6-24 along the side of the runway	Localizer, DME, PAPI power and control units, glideslope, ASOS

Source: McFarland Johnson, 2020.

Recommendation for Runway Object Free Areas: ROFAs penetrations should be mitigated where possible. MOS should be updated every five years.

Figure 5-8: Airport Design Surfaces



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5.2.8. Runway Protection Zones

RPZs are large trapezoidal areas on the ground off each runway end that are within aircraft approach and departure paths as shown in **Figure 5-8**.

The RPZ is intended to enhance the protection of people and property on the ground. Many land uses (i.e. residential, places of public assembly, fuel storage) are prohibited by FAA standards within these areas. However, these limitations are only enforceable if the RPZ is owned or controlled by the Airport sponsor. Airport control of these areas is strongly recommended and is primarily achieved through Airport property acquisition, but can also occur through easements or zoning to control development and land use activities.

PLANNING CONSIDERATION

For both existing RPZs as well as potential changes, the Airport should continuously monitor opportunities for incremental improvements through enhanced land controls with in the RPZs through easement or fee simple acquisition as they arise.

The dimensions of the RPZ for each runway end are a function of the type of aircraft and the approach visibility minimums associated with operations on that runway. The RPZ begins 200 feet beyond the end of the area useable[6] for takeoff and landing for all runways. The existing approach visibility minimums are shown in **Table 5-23**.

The Airport currently owns land in fee or easement off Runway 15 and 24 ends to control portions of the Airport's RPZs as well as to prevent the construction of obstructions or to maintain vegetative heights to avoid impact to the 14 CFR Part 77 approach surfaces. Areas within RPZs that are not currently under Airport control in avigation easement or fee simple include all portions of the Runway 6 RPZs west of Iyannough Road, the north and southwest corners of the Runway 15 RPZ, the southern corner of the Runway 24 RPZ, the eastern portion of the Runway 33 RPZ.

Table 5-23: RPZ Dimensions Per Runway End

Runway	Minimums	Length (feet)	Inner Width (feet)	Outer Width (feet)	Acreage
Runway 6	1 mile	1,700	500	1,010	29.465
Runway 24	4,000 feet	1,700	1,000	1,510	48.978
Runway 15	2,400 feet	2,500	1,000	1,750	78.914
Runway 33	1 mile	1,700	500	1,010	29.465

Sources: FAA AC 150/5300-13A; FAA HYA Terminal Procedures, effective date: April 23 – May 20, 2020.

There are several public roads, residences, commercial/industrial buildings, rail facilities, and parking lots located within the RPZs. These roads include, but are not limited to, Iyannough Road, Yarmouth Road, Mary Dunn Way, and Barnstable Road. According to recently published guidance

[6] Useable runway length is based on declared distances, which protects for safety areas prior to the landing threshold and beyond the end of the runway.

by the FAA, public roads are not considered compatible land uses within RPZs and are not recommended. The current FAA guidance does not require relocation of existing roadways within RPZs unless one of the following triggers occurs:

1. An airfield project (i.e. runway extension, runway shift)
2. A change in the critical design aircraft that increases the RPZ dimensions
3. A new or revised instrument approach procedure that increases the RPZ dimensions
4. A local development proposal in the RPZ (either new or reconfigured)

Recommendation for Runway Protection Zones: Acquire control of all land uses within existing RPZs (through fee simple acquisition or avigation easements) for those properties not currently under Airport control.

PLANNING CONSIDERATION

A runway extension could result in shifting RPZs, especially the Runway 15 approach RPZ. A review of land use and activity in the new extents of the RPZ will be coordinated with and approved by the FAA.

5.2.9. Runway Visibility Zone

Standards have been developed for pilot visibility along runways, and between intersecting runways, which are known as the runway visibility zone (RVZ). The RVZ is an area formed by imaginary lines connecting the two runway's visibility points, which are located half of the length between each runway end and the runway intersection. The current standard for intersecting runways recommends a clear line of sight between the ends of intersecting runways. According to FAA AC 150/5300-13A, terrain needs to be graded and permanent objects need to be designed or sited so that there will be an unobstructed line of sight from any point five feet above one runway centerline to any point five feet above an intersecting centerline, within the RVZ. These standards are currently met at the Airport through the 2015/2016 tree clearing project and regular vegetative maintenance.

Recommendation for Runway Visibility Zone: No improvements to the existing RVZ are recommended above and beyond regular vegetative maintenance the Airport is already conducting.

5.2.10. Runway Pavement Markings

All runway ends have precision instrument approach runway markings. Consequently, the runway markings at the Airport are appropriate for their current and future approach requirements respectively. It is not anticipated that either runway needs to be renumbered within the planning period based on local magnetic declination.

Recommendation for Runway Pavement Markings: No improvements to the existing runway pavement markings are required.

5.2.11. Taxiways

There are currently seven taxiways at the Airport. Both Runways 6-24 and 15-33 are served by full-length parallel taxiways. Planning standards for taxiways include taxiway width, taxiway safety areas, taxiway object free areas, taxiway shoulders, taxiway gradient, and for parallel taxiways, the distance between the runway and taxiway centerlines. The dimensions of each standard vary based on the identified ADG and taxiway design group (TDG) for each taxiway. The ADG is based on the wingspan and tail height of an aircraft, while the TDG is based on the distance between an aircraft's cockpit to main gear, as well as the width of the main gear. There are six ADG groups, and seven TDG groups. Details regarding the various dimensions follow in **Table 5-24** and **Table 5-25**.

As taxiways are constructed or rehabilitated, design should carefully consider the updated guidance for taxiway design as published in FAA AC 150/5300-13A, Change 1. The requirements include the design of taxiways for cockpit over centerline taxiing as opposed to judgmental oversteering. This change particularly impacts curves and intersections, which will require changes to accommodate the cockpit over centerline taxiing. The dimensions of intersection fillets (where the edge of pavement should be based on FAA design standards) and taxiway curves are based on the associated TDG for each taxiway.

The future design aircraft (A220) for both runways is a TDG 3 aircraft.

Table 5-24: Taxiway Requirements – Airplane Design Group

Design Standard	ADG I	ADG II	ADG III	ADG IV	ADG V	ADG VI
Taxiway Safety Area (feet)	49	79	118	171	214	262
Taxiway Object Free Area (feet)	89	131	186	259	320	386
Runway/Taxiway Separation (feet)	225 – 400*	240 – 400*	400	400	400	500*

Source: FAA AC 150/5300-13A.

* Runway/taxiway separation vary based on approach visibility minimums

Table 5-25: Taxiway Requirements – Taxiway Design Group

Design Standard	TDG 1	TDG 2	TDG 3	TDG 4	TDG 5	TDG 6	TDG 7
Taxiway Width (feet)	25	35	50	50	75	75	82
Taxiway Shoulder Width (feet)	10	15	20	20	30	30	40

Source: FAA AC 150/5300-13A.

Taxiway descriptions are shown in **Table 5-26**.

Table 5-26: Taxiway Descriptions

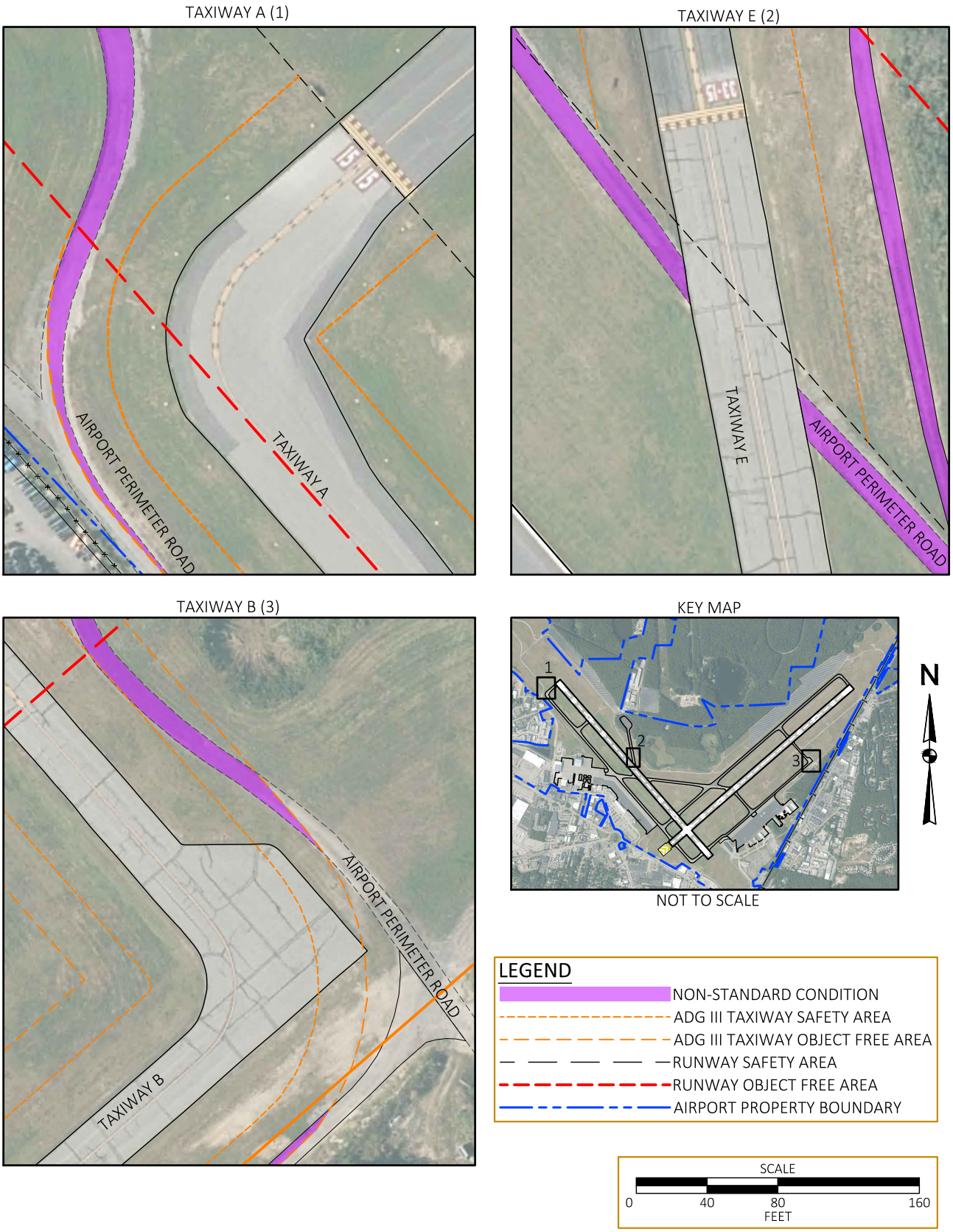
Taxiway	Width	Type of Taxiway	Runway-separation	Non-Standard Conditions	PCI (2016)	Notes
A	50'	Full-length parallel to Runway 15-33	400'	Perimeter Road in TOFA near Runway 15	80-97	Near Terminal Ramp was shifted in 2013

Taxiway	Width	Type of Taxiway	Runway-separation	Non-Standard Conditions	PCI (2016)	Notes
						Remainder was rehabilitated in and straightened in 2015
A1	65’	Stub	N/A	None	76	None
B	40’	Partial parallel to Runway 6-24	675’	Perimeter Road leading to wingspan restrictions	63-100	Aircraft are restricted to wingspans of 118’ or less (ADG III standards), except between Taxiway D and Runway 6-24, where aircraft are restricted to wingspans of 78’ or less.
C	50’	Full-length parallel to Runway 6-24	400’	None	54-100	From Taxiway D to Runway 24 was rehabilitated in 2016 Remainder was reconstructed and straightened in 2017
C1	55’	Stub	N/A	None	100	None
D	50-75’	Crossover	N/A	None	74-100	None
E	50’	Other	N/A	Perimeter Road and trees in TOFA	63	Connects Runway 15-33 to a run-up pit, measuring approximately 42,300 SF, located north of Runway 15-33

Sources: MassDOT Aeronautics Pavement Management System, 2016; AGIS Survey Data, 2019; and McFarland Johnson, 2021.

Non-standard taxiways can be seen in **Figure 5-9**.

Figure 5-9: Non-Standard TOFA and TSA Conditions



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Recommendations for Taxiways: The following non-standard design conditions were found and should be reviewed during the alternatives:

- Taxiway A TOFA: Airport perimeter road near the Runway 15 end penetrates the Taxiway A TOFA.
- Taxiway B TOFA: Airport perimeter road on the north side of Taxiway B penetrates the TOFA.
- Taxiway E TOFA: Airport perimeter road on the east side of Taxiway E and trees on the west side of Taxiway E penetrate the TOFA.

Additionally, the Airport should continue its pavement management plan. Any pavement condition with a PCI rating of failed, serious, very poor, and poor condition should be rehabilitated in the short-term. Pavement assessed as fair should be rehabilitated within the planning period.

If any changes to the taxiways occur, Engineering Brief No. 89, *Taxiway Nomenclature Convention*, dated March 29, 2012 should be reviewed to ensure clear taxiway nomenclature.

5.2.12. Passenger Terminal Ramp

The Terminal Ramp is approximately 160,000 SF, and extends approximately 830 feet along Taxiway A. The width of the Terminal Ramp is approximately 185-215 feet to the Airport perimeter road. This area of the Terminal Ramp will be utilized to determine the number of aircraft parking positions for this Master Plan.

The capacity of a Terminal Ramp is determined by the type of aircraft utilizing the terminal, guidance for wingtip separation and nose-to-building or wing-to-building clearances and considers the type of passenger loading bridges in use (not applicable at the Airport). Published guidance utilized to determine Terminal Ramp capacity are FAA AC 150/5360-13, *Planning and Design Guidelines for Airport Terminal Facilities*, and Air Transport Association of America, *Safety Guidelines SG 908, Revision 2010.1.* The Terminal Ramp is divided into two separately painted areas both of which accommodate ground-loaded parking positions for scheduled passenger and charter service. The Terminal Ramp, including all three areas described below, were rated in 2016 to have PCIs of 89-93.

Security Identification Display Area (SIDA)

The southern area of the Terminal Ramp is a security identification display area (SIDA), which means passengers must comply with Transportation Security Administration (TSA) requirements and come from the secure area of the terminal. This area of the Terminal Ramp has two marked parking positions: a large gate stand for the existing JetBlue service and a smaller marking that can accommodate up to an ADG II aircraft. The gate stand can accommodate the existing E190 service. The A220 is recommended to have 21.5 feet of wingtip clearance, 19 feet are provided between the aircraft wingspan and the existing light pole. It is recommended that pilots take caution and/or a wing-walker be used. The A320 meets wingtip clearance requirements.

Some rutting has occurred since the E-190 began utilizing the SIDA portion of the Terminal Ramp. Pavement strength should be reviewed at the next rehabilitation/reconstruction to account for existing and future design aircraft use.

Unsecure Ramp

This ramp area has seven parking areas and can accommodate up to three parking position for aircraft in ADG I (Cessna 402 or similar) and four positions for ADG II aircraft (Cessna Citation X or similar). This portion of the ramp is utilized by Cape Air flights traveling to and from Nantucket and Martha's Vineyard.

Deicing Area

Located south of the Terminal Ramp is the deicing ramp. The deicing ramp is also utilized as a self-service wash rack for aircraft.

Recommendation for Passenger Terminal Ramp: Pavement strength should be reviewed at the next rehabilitation/reconstruction to account for existing and future design aircraft use. If scheduled passenger service increases significantly, or changes to the type of aircraft utilizing the terminal occur, reconfiguration or expansion of the Terminal Ramp and review of deicing ramp may be required.

5.2.13. Potential Hot Spots and Geometry Requirements

In 2012, the FAA released the updated AC 150/5300-13A. This release came after numerous studies identified airfield geometry as a key factor in runway incursions. A runway incursion is any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and takeoff of aircraft.[7] The FAA continues to review runway and taxiway geometry to identify and address problematic geometry and is continuously updating safety and design standards. FAA AC 150/5300-13B is expected to come out in 2021.

PLANNING CONSIDERATION

The FAA continues to update its standards and recommendations as new information becomes available and new safety studies are conducted.

A hot spot is defined as "a location on an airport movement area with a history of potential risk of collision or runway incursion, and where heightened attention by pilots and drivers is necessary."[8] There are no published hot spots at the Airport.

Between 1990 and 2020 there were 15 accidents at the Airport, none of which are attributed to airport geometry. The Airport had four runway incursions since 2001.[9] At one of these incursions in 2004, an aircraft entered Runway 6-24 at Taxiway D (non-standard intersection angle) without

[7] FAA Runway Incursions, accessed April 8, 2021 <https://www.faa.gov/airports/runway_safety/resources/runway_incursions/>.
[8] Runway Safety – Hot Spot List, accessed Sep. 20, 2016 <http://www.faa.gov/airports/runway_safety/hotspots/hotspots_list/>.
[9] FAA Runway Incursion Database, accessed March 24, 2020 <http://www.asias.faa.gov>.

ATCT clearance. Two incursion reports do not have descriptions and therefore it is unknown if airport geometry was a factor.

Geometry Requirements

FAA AC 150/5300-13A has multiple criteria in the design of taxiways. These geometry criteria are as follows:

- Three Node Concept: The three node concept means that any taxiway intersection has no more than three choices – ideally left, straight, and right. Any more decision points make it potentially confusing to a pilot and does not allow for the proper placement of airfield markings, signage, and lighting. The three-node concept helps pilots maintain situational awareness. There are no intersections that exceed the three node concept at the Airport.

- Taxiway Intersection Angles: Taxiway intersections are preferred to be 90-degrees whenever possible. Standard angles including 30, 45, 60, 90, 120, 135, and 150 degrees are preferred over other, non-standard, angles. Although the AC provides standard angles and recommends using them, it is not considered a non-standard condition to have taxiways that do not match those angles. Those fillets will be designed based on aircraft movement modeling.

- Wide Expanse of Pavement: Wide pavements require placement of signs far from the pilot's eye which can be missed during low visibility conditions and should be avoided. This is especially critical at runway entrance points.

- Runway Crossings: Limiting runway crossings reduces the opportunity for human error and reduces air traffic controller workload.

- Avoid "High Energy" Intersections: These intersections are located in the middle third of runways. This portion is where the pilot can least maneuver to avoid a collision.

PLANNING CONSIDERATION

The FAA's airfield geometry goal is to standardize taxiway networks across all airports to reduce risks for runway incursions by minimizing confusing or uncommon/non-standard turning movements while taxiing.

- Runway Intersection Angles/Increase Visibility: Right (perpendicular) angle intersections, both between taxiways and runways provide the best visibility to the left and right for a pilot. A right angle at the end of a parallel taxiway is a clear indication of approaching a runway. Acute angle runway exits (ex. high-speed taxiways) provide for greater efficiency in runway usage, but should not be used as a runway entrance or crossover point. Parallel taxiways crossing other runways are considered standards.

- Avoid "Dual Purpose" Pavement: Runways used as taxiways and taxiways used as runways can lead to confusion. A runway should always be clearly identified as a runway and only a runway. There is no dual purpose pavement at the Airport.

- Indirect Access: Taxiways leading directly from an apron to a runway without requiring a turn can lead to confusion when a pilot typically expects to encounter a parallel taxiway but instead accidentally enters a runway.

- Multiple Taxiway Crossings Near Runway: A taxiway crossing a high-speed taxiway or multiple taxiways crossing each other between the hold line and the runway could cause confusion, additional time on the runway, and wrong turns/loss of pilot situational awareness.

- Taxiway Intersecting Multiple Runways: Taxiways must never coincide with the intersection of two runways. This creates a large expanse of pavement making it difficult to provide proper signage, marking, and lighting. These could lead to pilot disorientation and potential wrong runway use. There are no taxiways intersecting multiple runways at the Airport.

- Aligned/Inline Taxiway: An aligned taxiway is one whose centerline coincides with a runway centerline. This places taxiing aircraft in direct line with aircraft landing or taking off therefore closing the runway for other traffic and potentially causing loss of situational awareness. Existing aligned taxiways should be removed as soon as practicable. There are no inline taxiways at the Airport.

- "Y" Shaped Taxiway Crossing a Runway: Any runway crossing or runway exit that requires a pilot to make a decision prior to exiting the runway may cause a delay in the aircraft existing the runway and loss of situational awareness.

- Multiple Runway Thresholds in Close Proximity to One Another: If possible, safety areas of runway ends should not overlap, since work in the overlapping area would affect both runways. Configurations where runway thresholds are closer together should be avoided, as they can be confusing to pilots, resulting in wrong-runway takeoffs. The angle between extended runway centerlines should not be less than 30 degrees to minimize confusion. There are no multiple runway thresholds in close proximity to one another at the Airport.

- Short Taxi Distance: A short distance between the terminal and the runway requires flight crews to complete the same number of checklist items in a shorter timeframe and requires more heads-down time during taxi. Many of the event reports mentioned that the flight crew members were rushing to complete their checklists or to expedite their departures.

- Taxiway Stubs: Short taxiway stubs including overlapping holdlines or holdlines too close together to accommodate the length of an aircraft can create confusion and may cause runway incursions or accidents. Holdlines are property located and spaced at the Airport.

- Unexpected Holdlines: Holdlines located on a parallel taxiway or other unexpected location are more likely to be overlooked and cause a runway incursion or accident and should be avoided.

- **Intersection Departures**: Airports with a single runway layout were not immune to airplanes taking off on the wrong runway, especially when intersection departures were made. In these events, the flight crew taxied onto the runway and turned in the wrong direction, taking off 180 degrees from the intended direction.

The following elements or contributing factors are historically associated with wrong runway uses and should have the highest priority in resolving: [10,11]

- Multiple runway thresholds located in close proximity to one another
- A short distance between the airport terminal and the runway
- A complex airport design
- The use of a runway as a taxiway
- A single runway that uses intersection departures
- A single taxiway leading to multiple runways
- More than two taxiways intersecting in one area
- A short runway (less than 5,000 feet)
- Joint use of a runway as a taxiway

Table 5-27 shows non-standard geometry at the Airport.

Table 5-27: Non-Standard Geometry at HYA

Geometry Requirement	Taxiway/Taxiway Intersection	Runway/Taxiway Intersection
Three Node Concept	None	None
Taxiway Intersection Angle	Taxiways A & D - 138° (fillets meet standards)	See Increase Visibility
Wide Expanse of Pavement	N/A	None
Runway Crossings	N/A	RWY 6-24 – 2 RWY 15-33 – 2
High Energy Intersections	N/A	RWY 15-33 at TWYs D & E RWY 6-24 at TWY D (RWY 24 & RWY 6 departures) RWY 6-24 at TWYs B & C1
Increase Visibility	See Taxiway Intersection Angle	RWY 6-24 at TWY D RWY 15-33 at TWY D RWY 15-33 at TWY E
Dual Purpose Pavement[1]	N/A	RWY 6 threshold RWY 33 threshold RWY 24 from TWY B
Direct Access	N/A	RWY 15-33 at TWY D
Multiple Taxiways Crossing	N/A	TWYs D, E, and RWY 15-33

[10] Wrong Runway Departures, Aviation Safety Information Analysis and Sharing, July 2007.

[11] Wrong Runway Departures, FAA Runway Safety, September 2009, accessed Feb. 3, 2016 <https://www.faa.gov/airports/runway_safety/publications/media/wrong%20runway%20FINAL%20draft%20sept09.pdf>.

Geometry Requirement	Taxiway/Taxiway Intersection	Runway/Taxiway Intersection
Taxiway Intersecting Multiple Runways	N/A	None
Aligned Taxiway	N/A	None
Y-Shaped Runway Crossing	N/A	None
Multiple Runway Thresholds in Close Proximity	N/A	None
Short Taxi Distance	N/A	None
Taxiway Stubs	N/A	None
Unexpected Holdline	N/A	None
Intersection Departure	N/A	TWY B for RWY 24 TWY C1 for RWY 24 (if TWY C is blocked)

N/A – not applicable; RWY – runway; TWY – taxiway
[1] These identify where taxiways should line up with runways thresholds. There is no location on the Airport that is considered full dual purpose pavement.
Source: McFarland Johnson Analysis, 2020.

Recommendation for Hot Spots and Geometry Requirements: Non-standard geometry should be resolved as much as practicable. Priority should be set to resolve the geometry requirements outlined in the above **Table 5-27**: high energy intersections, direct access, and multiple taxiways crossing a runway.

5.2.14. Airfield Lighting and Signage

Approach Lighting

The existing precision instrument approach to Runway 24 is equipped with 1,400-foot medium intensity approach lighting system with sequence flashers (MALSF). The precision approach to Runway 15 is equipped with 2,400-foot medium intensity approach lighting system with runway alignment indicator lights (MALSR). Presently, no approach lighting systems are available for Runways 6 or 33. The Airport has a MOS for the MALSF, which was approved on February 16, 1978 for being radio controlled during hours when the ATCT is not operating. This MOS can be found in **Appendix I**.

The current approach lighting systems on Runways 15 and 24 meet the standards for ILS category (CAT) I approach. During IFR conditions, wind conditions favor Runways 15 during high wind speeds and during peak seasons while winds favor Runway 24 during lower wind speeds.

Recommendation for Approach Lighting: There are no recommendations for changes to approach lighting.

Runway and Taxiway Lighting

Both Runways 15-33 and 6-24 are equipped with high intensity runway edge lights (HIRLs). These help pilots see the runways at night and during low visibility conditions.

Taxiway edge lights are provided on most taxiways. Taxiways A, A1, portions of B, C, C1, and D are equipped with high intensity taxiway lights (HITLs). The portion of Taxiway B from Taxiway D to Runway 24 has medium intensity taxiway lights (MITLs). The Airport also has reflective markers to mark the pavement edge of the run-up area near Runway 24 on Taxiway B and to mark the no-taxi island on the East Ramp beyond the intersection of Taxiways B and D. Taxiway E is unlit.

Runway threshold lights at the Runway 15 end are approximately 1.5 feet from the runway end, whereas the minimum standard is two feet.

Airfield lighting is controlled by an on-site Airport electric vault located on the East Ramp. The Airport also has a new backup generator and regulators.

Recommendation for Runway and Taxiway Lighting: Taxiway lights or reflective markers should be considered for Taxiway E in its current location. The Runway 15 threshold should be reviewed for separation between the runway end point and the runway threshold lights.

Airfield Signage

Airfield signage helps pilots identify where on the Airport they are located. There have been no complaints about missing or confusing airfield signage. There is currently one MOS for Airport signage. The runway-runway intersection sign on Runway 15 is 325 feet from Runway 6-24. Standard distance would be 500 feet from Runway 6-24 when hold short operations are conducted. Placing the sign 500 feet from the runway would result in the sign being located on Taxiway C. This MOS was approved on September 18, 1989. Should the Federal Aviation Regulations (FAR) Part 139 inspections identify any additional non-standard conditions, these should be addressed.

Recommendation for Airfield Signage: There are no recommendations for airfield signage.

5.2.15. Visual Approach Aids

Visual approach aids help pilots visually confirm they are on the right glide path to the runway. Runways 6, 24, and 33 are equipped with a 4-box precision approach path indicator (PAPI) system on the left side of each end with a standard 3-degree glide path. Runway 6 is also equipped with runway end identifier lights (REILs) at the end of the runway.

Recommendation for Visual Approach Aids: It is recommended a PAPI be installed for Runway 15 during the planning period.

5.2.16. Airfield Facility Requirements Summary

Several requirements for airside facilities have been discussed throughout this section. A summary of the key requirements identified can be found in **Table 5-28**. Geometry issues are identified in **Table 5-27**.

Table 5-28: Summary of Airside Facility Requirements

Item/Facility	Existing Facility or Capacity	Ultimate Requirement	Additional Need
Runway Length (Section 5.2.2)	Runway 15-33 – 5,253' Runway 6-24 – 5,425'	One or both runways 6,000'-6,400'	575'-1,147'
Runway Width (Section 5.2.3)	Runway 15-33 – 150' Runway 6-24 – 150'	Runway 15-33 – 150' Runway 6-24 – 150'	None
Runway Strength and Condition (Section 5.2.4)	Runway 15-33 – 43 F/A/X/T Runway 6-24 – 32 F/A/X/T	Runway 15-33 – 43 F/A/X/T Runway 6-24 – 32 F/A/X/T	Potential Runway 6-24 strengthening
Runway Orientation (Section 5.2.5)	Runway 15-33 – C-III Runway 6-24 – C-III	Maintain current orientation and Runway 15-33 – C-III Runway 6-24 – C-III	None
Runway Safety Areas (Section 5.2.6)	Portions of Runways RSAs off Airport property	Provide standard RSA on all runways	Enhanced control of all RSA through ownership
Runway Object Free Areas (Section 5.2.7)	Portions of Runways ROFAs off Airport property	Provide standard on all runways	Enhanced control of all ROFA through ownership or avigation easements
Runway Protection Zones (Section 5.2.8)	Partially under airport control through ownership and avigation easements	Under airport control through ownership or avigation easements	Enhanced control of all RPZs through ownership or avigation easements
Runway Visibility Zone (Section 5.2.9)	Half of the length between each runway end and the runway intersection	Half of the length between each runway end and the runway intersection	None
Runway Pavement Markings (Section 5.2.10)	Runway 15-33 – Precision Runway 6-24 – Precision	Runway 15-33 – Precision Runway 6-24 – Precision	None
Taxiways (Section 5.2.11)	Runway 15-33 – Full Parallel Runway 6-24 – Full Parallel Non-standard TSA/TOFAs	Runway 15-33 – Full Parallel Runway 6-24 – Full Parallel Standard TSA/TOFAs	Meet FAA standards
Taxiway Width (Section 5.2.11)	40' – 65'	50' – 75'	Meet TDG 3 guidelines

Item/Facility	Existing Facility or Capacity	Ultimate Requirement	Additional Need
Passenger Terminal Ramp (Section 5.2.12)	160,000 SF	Meet Demands of Future Design Aircraft	Potentially reconfigure Terminal Ramp to accommodate future design aircraft
Potential Hot Spots and Geometry Requirements (Section 5.2.13)	See **Table 5-27**	Meet FAA geometry standards	Address airfield geometry concerns
Runway Lighting and Signage (Section 5.2.14)	Runway 15-33 – HIRLs Non-standard Runway 15 threshold lights Runway 6-24 – HIRLs	Runway 15-33 – HIRLs Standard Runway 15 threshold lights Runway 6-24 – HIRLs	Address Runway 15 threshold lights
Approach Lighting/ Instrument Approaches (Section 5.2.14)	Runway 15 – ILS/DME, GPS Runway 33 – GPS Runway 6 – GPS, VOR Runway 24 – ILS/DME, GPS	Runway15 – ILS/DME, GPS Runway 33 – GPS Runway 6 – GPS, VOR Runway 24 – ILS/DME, GPS	None
Taxiway Lighting (Section 5.2.14)	Taxiways A, Portion of B, C, D – HITLs Portion of Taxiway B - MITLs Taxiway E - Unlit	All taxiways lit or marked with reflective markers	Add MITLs or reflective markers to Taxiway E
Runway Visual Aids (Section 5.2.15)	Runway 15 – None Runway 33 – PAPI Runway 6 – PAPI Runway 24 – PAPI	Runway 15 – PAPI Runway 33 – PAPI Runway 6 – PAPI Runway 24 – PAPI	Add PAPI to Runway 15

Sources: FAA Form 5010-1; McFarland Johnson analysis, 2020.

5.3. PASSENGER TERMINAL FACILITY REQUIREMENTS

This section addresses the methodology, assumptions, and general planning-level factors used to analyze facility requirements for key functional areas of the Airport passenger terminal. Requirements were analyzed based on a multitude of factors and compared to growth triggers identified in Chapter 4, *Forecasts*. The primary tool used to model various terminal space requirements was ACRP Report 25, *Airport Passenger Terminal Planning and Design, Volume 2: Spreadsheet Models and User's Guide (the Model)*. Additionally, guidelines published in the following publications were included:

- International Air Transport Association's (IATA) *Airport Development Reference Manual* (ADRM, 10th Edition);

- FAA AC 150/5360-13A, *Airport Terminal Planning*; and
- FAA AC 150/5300-13A (Change 1), *Airport Design*.

This review was conducted based on standard terminal design. New guidance may come out because of COVID-19 social distancing requirements, which may result in additional need above and beyond what is identified in this section.

5.3.1. Existing Passenger Terminal

The Airport terminal building was constructed in 2011 and consists of two floors. The first floor encompasses approximately 26,600 SF and provides secure and non-secure areas for passengers. Secure areas and sterile areas are areas that authorized Airport personnel and passengers may enter after having been processed through the security screening checkpoint overseen by the TSA.

The second floor is comprised entirely of sterile space, including Airport and TSA offices, as well as support space and storage.

5.3.2. Methodology

Utilizing the Model and FAA and industry standards guidance listed above, the following passenger processing functions were examined:

- Terminal Curb Length
- Passenger Check-In and Ticketing
- Outbound Baggage Screening and Make-Up
- Passenger Security Screening Checkpoint
- Passenger Holdrooms
- Concessions
- Inbound Baggage Handling and Baggage Claim
- Other Terminal Support Functions

To best inform potential future needs, the terminal building analysis was performed under three scenarios:

- Existing provision
- 150 peak hour passengers
- 200 peak hour passengers

Application of the Model under these scenarios is presented in the following sections.

Application of the ACRP Model

The Model is designed to determine terminal requirements by functional area based on historical and forecasted annual enplanements, departures, and gates. The Model uses these inputs (along with a variety of assumptions) to identify peak hour activity. From this point, the Model relies on peak hour activity levels to produce space requirements that can accommodate demand as it grows. In this way, the Model serves as “top down” analysis, starting with annual demand to estimate peak activity demand. Facility requirements at the Airport were determined using the three planning activity levels of existing provision, 150, and 200 peak hour passengers. All outputs

of this analysis reflect the standard spaces required and standard operating procedures regardless of the existing conditions/configuration so that an accurate assessment of future needs can be identified.

5.3.3. Assumptions

This section summarizes the assumptions utilized for the assessment of the existing Airport terminal building.

Percentage of Originated Passengers

For purposes of analyzing passenger terminal space requirements, it is assumed that 100 percent of enplaned (departing) passengers are originating at the Airport. The originating passenger percentage is used to determine the number of passengers to be processed through check-in/ticketing and security screening, along with associated demands on outbound baggage functions, holdroom usage, and gate/boarding area egress.

Vehicle Demand at Terminal Curb

Vehicle demand is measured based on the range of vehicle types used by passengers as ground transport to an airport for departing flights. These include everything from private automobiles typically carrying one to three passengers to tour buses carrying large groups of passengers. While some hotel shuttles and buses may drop off and pick up passengers, they are infrequent in nature and also not overly common at other similar sized airports, therefore the focus is placed on the use and operation of personal vehicles and/or those that share the size and characteristics of such.

The estimated passenger breakdown by landside mode is as follows:

- Parking lots: 40 percent
- Pick-up/drop-off: 25 percent
- Taxis and transportation network companies (TNCs): 25 percent
- Rental cars: 10 percent

In addition to this breakdown, the analysis also assumes an average party size of 1.25 people for parked vehicles and those involved in personal pick-ups and drop offs. Rental cars, taxis and TNCs (Uber, Lyft, etc.) all assume one passenger per transaction. With the introduction of more leisure-oriented service, the average party size may increase; however, the lower party size is a more conservative estimate in facility planning (meaning the requirement will be greater) and facility needs should be reevaluated with a focus on party size should the service offering at the airport change to more of a leisure mix.

The terminal curb is approximately 375 feet in length. Of the total length, approximately 245 linear feet (LF) are associated with passenger drop-off/ticketing and 120 LF are located outside the doors leading to baggage claim for passenger pick-up.

Table 5-29 illustrates the assumed breakdown of existing peak vehicle demand at the curb, dwell time assumptions, and passenger per vehicle assumptions, all of which are integral to the calculation of terminal curb requirements. It is assumed that 50 percent of the peak hour demand

will occur during the peak 20-minutes, representative of the peak conditions that occur before or after a flight. Curb front and landside elements should be planned for the peak 20-minute period.

Table 5-29: Peak Hour Vehicle Assumptions

	Existing Conditions		150 Peak Hour Passengers		200 Peak Hour Passengers	
	Cars	Curb (LF)	Cars	Curb (LF)	Cars	Curb (LF)
Parking Lot						
Parking Lot	16	N/A	24	N/A	32	N/A
Parking Lot Peak 20 min.	8	N/A	12	N/A	16	N/A
Curb Length						
Pick-up/ Drop-off Peak Hour	32	128	48	192	64	256
Pick-up/ Drop-off Peak 20 min.	16	64	24	96	32	128
Taxi/TNC's Peak Hour	20	80	30	120	40	160
Taxi/TNC's Peak 20 min.	10	40	15	60	20	80
Total Curb Peak Hour	52	208	78	312	104	416
Total Curb Peak 20 min.	**26**	**104**	**39**	**156**	**52**	**208**
Exit Traffic	**Vehicles Only, includes Parking and Rental Cars**					
Total Exit Peak Hour	88		132		176	
Total Exit Peak 20 min.	44		66		88	

Source: McFarland Johnson analysis, 2020.

Not all landside passengers will utilize the curb, such as parked vehicles and rental cars, however the total peak 20-minute numbers can also be used when planning traffic and roadway improvements associated with the terminal operation. As seen in **Table 5-29,** the long-term peak 20-minute need for the length of a vehicle curb at the Airport is up to 208 LF compared to the existing available useful curb length of 375 LF.

Recommendation for Terminal Curb Length: The existing and available useful curb length at the passenger terminal should be sufficient for each of the forecast scenarios under consideration in the 20-year plan.

Passenger Check-in /Ticketing

Passenger check-in/ticketing includes the functions of full-service staffed airline counter positions, self-serve kiosks, active check-in area, passenger queue area, airline ticket office areas, circulation area, and public restrooms accessible from the ticketing lobby. Assumptions for these areas include the following:

- 60 percent of peak hour passengers could be experienced in the peak 30-minute period.
- 75 percent of passengers use check-in and ticketing facilities.
- 50 percent will use self-service check-in and 50 percent will use staffed positions
- Average passenger processing time at the counter or kiosk is three minutes.

Industry trends favor an increase in self-service check-in practices. While there is presently no self-tagging/checked baggage drop at the Airport, this is a provision that should be planned for in the future. Staffed check-in positions in the traditional form are likely to be minimal by the end of the planning period and replaced with more kiosks or mobile supporting technology that occurs away from the traditional ticket counters.

Summary of Passenger Check-in/Ticketing: The current passenger check-in/ticketing space spans approximately 3,670 SF. Approximately 1,446 SF are needed to accommodate 150 peak-hour passengers and 1,897 SF to accommodate 200 peak-hour passengers.

Outbound Baggage Make-Up and Screening

Outbound baggage screening and make-up functions includes operations by TSA to screen checked baggage and airline staff to collect and disperse bags to carts and the appropriate aircraft prior to departure. The ACRP Model assumes that this practice will be done with Explosive Detection System (EDS) baggage screening technology. With the existing seasonality and low level of activity, the Airport currently resorts to the slower, more manual method of Explosive Trace Detection (ETD). At larger airports, when newer, more efficiently technology is introduced, it often creates surplus equipment for airports like HYA so this analysis is based on the application and operation of EDS technology for baggage screening. Assumptions for these areas include the following:

- 65 percent of passengers will check a bag
- Average of one bag per passenger
- TSA surge factor of 50 percent for peak processing
- 20 percent alarm rate for additional screening (level 2 on-screen resolution (OSR)), 95 percent clear rate, 5 percent requiring level 3, explosives trace detection (ETD)
- Level 1 EDS screening rate of 220 bags per hour, with an alarm rate of 20 percent
- Level 2 OSR processing ration was set at 60 bags per hour
- Level 3 ETD screening, the TSA suggests 24 bags per hour per operator

Baggage screening space requirements contained in the Model were utilized here, and are as follows:

- Level 1 Area: 500 SF per EDS unit
- Level 2 Area: 40 SF per OSR station

- Level 3 Area: 100 SF per ETD station

An additional 35 percent of space is added for circulation area and 15 percent to allow for future equipment changes and any required reconfiguration or renovations.

Summary of Outbound Baggage Make-Up and Screening: The current outbound baggage make-up and screening space spans approximately 2,000 SF. Approximately 3,240 SF are needed to accommodate 150 and up to 200 peak-hour passengers.

Passenger Security Screening Checkpoint

This section discusses the assumptions utilized to analyze the future demand for security screening of departing passengers. The assumed processing rate for the analysis is 120 persons per hour for a single lane screening module and 175 persons per hour for a two-lane screening module configuration. The constrained configuration of the Airport means 120 peak hour passengers is an optimistic case.

PLANNING CONSIDERATION

Technology trends for enhanced self-service and biometric passenger identification should be monitored for application/implementation to support passenger processing at the Airport.

Although TSA recommends 2,800 SF of space for a two-lane (two bag screening with a shared walk through) screening module, HYA currently accommodates one lane (one bag screening with one walk through) within roughly 1,300 SF. The single lane has an approximate throughput of 120 peak hour passengers while a two-lane checkpoint can process approximately 175 peak hour passengers. Based on these throughputs a two-lane checkpoint would likely be required if multiple forecast scenarios occur.

The percentage of assumed non-passenger traffic, such as employees and crew, represents ten percent of the throughput, which was added to the design peak hour passenger screening demand and is based on recent experience at other airports.

As with other functional areas, allowances were also included for future equipment changes (ten percent) or reconfigurations and TSA support space (12 percent).

Summary of Passenger Security Screening Checkpoint: The current passenger security screening checkpoint space spans approximately 2,305 SF. Approximately 4,981 SF are needed to accommodate 150 peak-hour passengers and 6,366 SF to accommodate 200 peak-hour passengers.

Passenger Lounges/Holdrooms (Secure)

Holdroom space typically accounts for seating a certain percentage of passengers, with the remaining passengers either not in the holdroom area or standing. The analysis assumed 15 SF per seated passenger and 10 SF per standing passenger. The Model also includes some flexibility to account for amenities (e.g., children's play area, telephones, work areas, charging stations, etc.),

and high utilization and holdroom sharing, when the holdroom is utilized for passengers waiting for more than one flight or is shared between gates. Other assumptions include:

- 80 percent of passengers are seated
- 20 percent of passengers are standing
- No sharing of holdroom space with adjacent gates (there is only one hold room under existing conditions)

Allowances for amenities, circulation, and restrooms are assumed to be 5 percent, 35 percent, and 15 percent, respectively.

Summary of Secure Passenger Lounges/Holdrooms: The current secure passenger lounges/holdroom space spans approximately 2,550 SF. Approximately 6,878 SF are needed to accommodate 150 peak-hour passengers and 9,072 SF to accommodate 200 peak-hour passengers.

Inbound Baggage Handling and Baggage Claim

Inbound baggage handling includes the unloading of baggage from aircraft and transferring them to the baggage claim unit for circulation to the baggage claim hall. The Model calculates baggage claim requirements assuming that a certain percentage of passengers will deplane in a peak 30-minute period. As previously noted, it is also assumed that 65 percent of passengers will check one bag. Much of the assumptions and analysis in the model assumes some sort of baggage claim device other than a chute, which is currently used at the Airport. The resulting baggage claim requirements are reflective of a more standardized claim device, which would become necessary with increased activity. Additionally, the following assumptions are made:

- An additional 10 percent is applied to the number of passengers checking bags to account for meters and greeters
- 1.3 LF of claim is required for each person in the claim lobby
- Baggage claim area is increased by 15 percent to provide for baggage services office
- Baggage claim area is increased by 15 percent to provide for meet and greet area
- Baggage claim area is increased by 20 percent to provide for circulation space
- Baggage claim area is increased by 10 percent to provide for restroom facilities

To account for inbound baggage handling area the following assumptions are made:

- Take off belts require 850 SF of space each
- Baggage train circulation requires 1,275 SF of per take off belt
- 255 SF per take off belt is provided to account for conveyor belts equipment and other miscellaneous equipment

Some of these areas supporting the inbound baggage delivery do not necessarily need to be within the building envelope.

Summary of Inbound Baggage Handling and Baggage Claim: The current inbound baggage handling and baggage claim space spans approximately 1,385 SF. Approximately 4,292 SF are

needed to accommodate 150 peak-hour passengers and 8,820 SF to accommodate 200 peak-hour passengers.

Concessions

Terminal concessions include both non-secure and secure area retail establishments to service departing and arriving passengers. This assessment is generalized due to the low activity and limited existing concessions at the Airport. The Model makes the following assumptions to calculate spatial requirements:

- Food and beverage-based concessions require seven SF per peak hour passenger
- Retail based concessions requires 3.5 SF per peak hour passenger
- Service based concessions require 0.5 SF per peak hour passenger
- A multiplier of 20-30 percent is used to account for support space for food, beverage, and retail concessions
- Internal circulation area allowance of 15 percent is also included for terminal building concession areas

While the primary concession at the Airport is currently vending, the output of this analysis should be used to inform the terminal development alternatives so that more traditional concessions can be accommodated as passenger activity increases. It is assumed that even with the robust forecast scenarios that concession offerings at the Airport will be limited, with a focus on enhanced vending and grab-and-go style kiosks. Any full-service restaurant type of facility will likely be non-secure and also have a public-facing component to it.

Other Terminal Support Facilities

The final consideration of passenger terminal functional areas includes allowances for the various support areas.

A provision of five percent of the total departure/arrival areas is provided for the following:

- Airline operations
- Ground handling services
- Airport operations and maintenance
- Facilities support and services

A provision of ten percent of the total departure/arrival areas is provided for the following:

- Building structure
- Vertical circulation
- Mechanical/electrical/utility
- Allowance for other tenants/configurations

Summary of Other Terminal Support Facilities: The current terminal support facilities space spans approximately 13,645 SF. Approximately 15,644 SF are needed to accommodate 150 peak-hour passengers and 17,871 SF to accommodate 200 peak-hour passengers.

Concourse Gates, Passenger Board Bridges, and Terminal Ramp

To determine the required number of concourse gates, and subsequently passenger boarding bridges and terminal ramp requirements, the Model employs a passengers per gate approach and a departure per gate approach. The resulting average of these two approaches is a total of three gates. It is recommended that the three gates have a minimum sizing capability for servicing of an E190, with a standard AAC-ADG C-III sizing to accommodate an A320 or Boeing 737 for operational flexibility in the future.

Summary of Concourse Gates, Passenger Board Bridges, and Terminal Ramp: Future operational flexibility requires a total of three gates with a minimum sizing capability for servicing an E190, with a standard AAC-ADG C-III sizing.

5.3.4. Results of Analysis

The results of the terminal capacity assessment are summarized in **Table 5-30**.

Table 5-30: Terminal Requirements Summary

Terminal Functional Area	Existing Provision (SF)	150 Peak Hour Passenger Requirements (SF)	200 Peak Hour Passenger Requirements (SF)
Check-In /Ticketing (including airline ticket offices)	3,600	1,446	1,897
Outbound Baggage Screening & Makeup	2,000	3,240	3,240
Passenger Security Screening Checkpoint	2,300	4,981	6,366
Secure Holdrooms	2,600	6,878	9,072
Baggage Claim and Inbound Baggage Handling	1,400	4,292	8,820
Non-Secure Areas	5,100	3,329	4,814
Other Functions/Tenants	15,000	15,644	17,871
Total (interior space)	32,000	39,810	51,422
Passenger Terminal Requirement Range		**35,000-40,000**	**50,000-55,000**
Difference between Existing Provision and Requirement (SF)		**4,380-9,380**	**19,380-24,820**

Sources: ACRP Model and McFarland Johnson analysis, 2020.

Recommendation for Terminal: It is recommended the Airport pursue a terminal building of at least 35,000 SF to meet existing demand and up to 55,000 SF to meet demand at 200 peak hour passengers. Some of these functional space requirements may be achieved by repurposing space within the existing building (approximately 30,600 SF).

5.4. PARKING AND ROADWAY ACCESS FACILITY REQUIREMENTS

The following facilities were considered:

- Airport Access and Signage
- Passenger Parking Requirements
- Rental Car Parking Requirements

5.4.1. Airport Access and Signage

As noted in Chapter 2, *Inventory*, there is no clear entrance to the Airport. Since there is no dedicated on-airport entrance road, traffic is routed different ways, depending on where it is coming from. The FAA requires that airport revenues can only be spent on airport property, which means off-property access improvements require a different sponsor such as the Town of Barnstable or MassDOT.

The four most common routes to the Airport direct traffic from Route 6 via Exit 68, Route 6 via Exit 72, Centerville, and the waterfront. Traffic coming from the north along Route 6 via Exit 68 is directed to Attucks Lane and Airport Road. Attucks Lane dead-ends into Airport Road, which turns into Barnstable Road. Traffic coming from the west along Routh 6 via Exit 72 is directed to Iyannough Road (via Willow Street and Yarmouth Road) which provides access to the Airport's general aviation facilities on the East Ramp and Airport Road prior to the rotary. Traffic coming from the south and west are directed to access Barnstable Road via Hinckley Road after passing through the rotary.

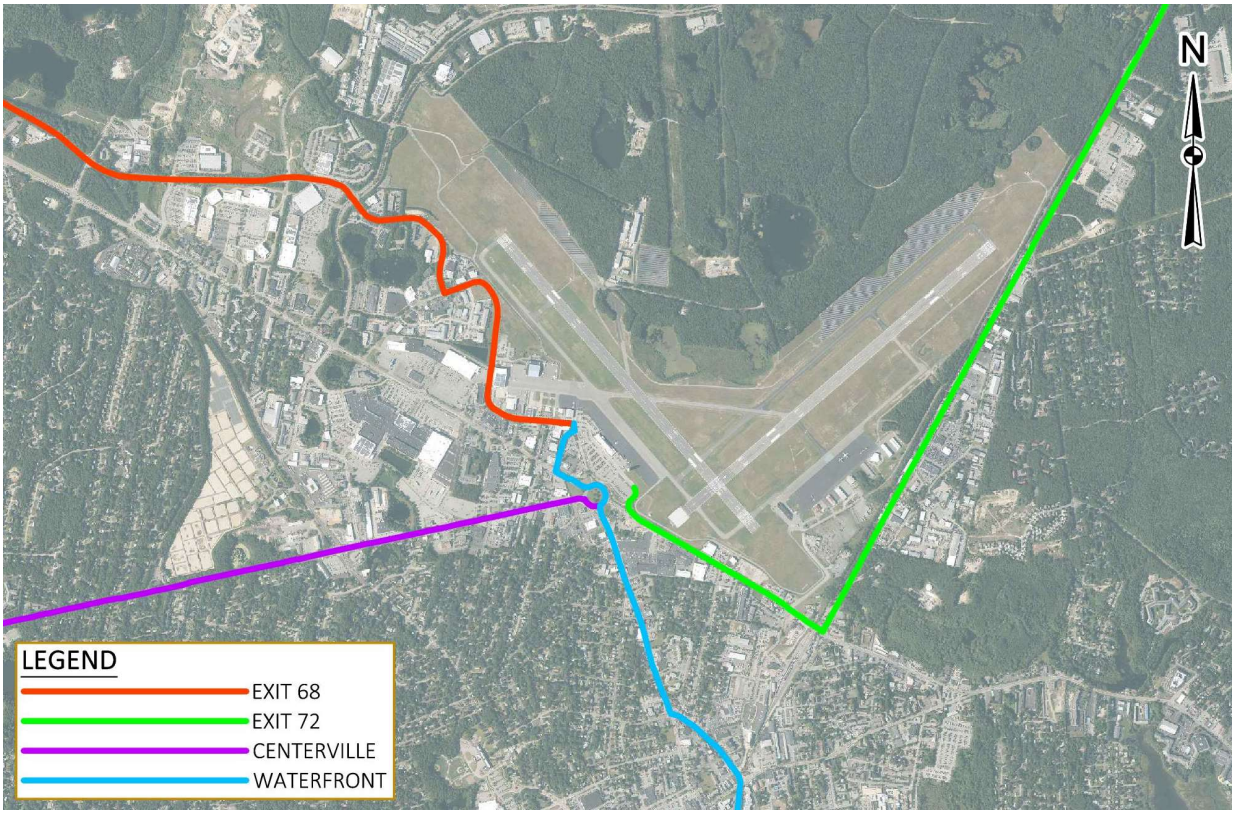
Accessing the Airport can be confusing to its users and, during peak season, traffic through the rotary backs up, making accessing the Airport difficult. There are multiple ways to get to the Airport with numerous decision points along the way. The four most common routes are summarized in **Table 5-31** and shown in **Figure 5-10**.

Table 5-31: Airport Access Routes

Access Routes	Number of Decision Points
Route 6 via Exit 68 to Airport	10
Route 7 via Exit 72 to Airport	4
Centerville to Airport	12
Waterfront to Airport	10

Source: McFarland Johnson Analysis, 2020.

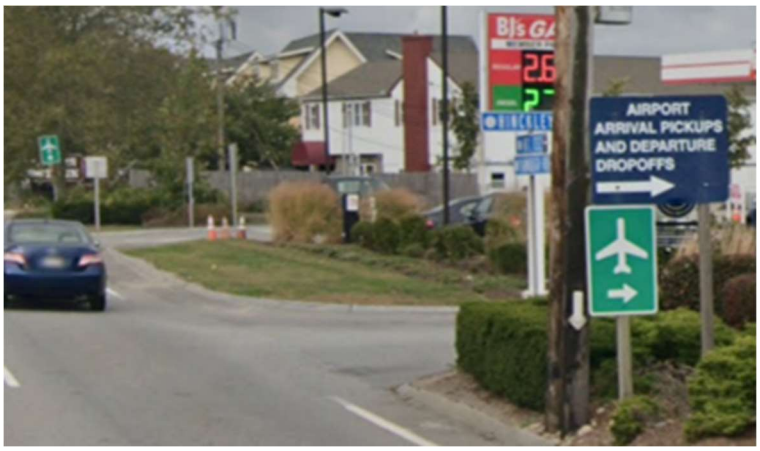
Figure 5-10: Routes to HYA



Source: McFarland Johnson Analysis, 2020.

Airport signage is small and unclear. Sign spacing leads to confusion as there is not enough time to change lanes or more than one sign, with conflicting directions, can be seen at once.

The Airport Road is accessed off of Barnstable Road as well as Iyannough Road. The entrance road offers three ticket locations for access to the terminal parking lot.



Recommendations for Airport Access and Signage: A follow-on Airport signage and access study should be considered due to the congestion of the area surrounding the Airport and lack of a direct access to the terminal. Wayfinding and signage should be improved throughout the Airport entrance circulation. Ways of access and routes to the Airport should be simplified to reduce confusion and reduce traffic through the rotary. Branding and illumination should be incorporated to improve Airport identification and clearly direct users to the correct area of the Airport.

5.4.2. Passenger Parking Requirements

As presented in Chapter 2, *Inventory*, the Airport maintains three terminal area parking lots and one overflow lot. The passenger parking lot contains 585 spaces. The overflow parking lot, which accommodates approximately 400 parking spaces, is available during peak season. The long-term requirement for passenger auto parking will vary greatly with the different forecast scenarios previously presented for consideration. Baseline demand levels consist of primarily day trips or short duration trips to the Nantucket, with some people starting their longer duration trips at the Airport and flying to Boston (and/or JFK in the summer season) to connect onward. This baseline passenger auto parking demand is estimated to be approximately 125 spaces. Under different forecast scenarios the demand for passenger auto parking will increase. If there are daily departures year-round to network airline hubs and also if there are bi-weekly flights to Florida, auto parking demand could rise to as much as to need roughly 465 spaces on average (potentially higher during peak times). The existing lot in front of the passenger terminal has sufficient space to meet the demand under both the baseline and various forecast scenarios.

Recommendation for Passenger Parking: There is no recommendation for additional passenger parking. Under several of the forecast scenarios, it may become necessary to limit the number of non-aviation contracts that also utilize the parking lot at the Airport.

5.4.3. Rental Car Parking Requirements

Rental car demand has been evolving as there has been consolidation within the parent companies of the various brands. In addition, ride-sharing companies have made it easier for users to not need rental cars if the driving is going to be limited and nearby. Additional industry disrupters such as more widespread vehicle subscription services and car-sharing apps will likely influence future demand as well and should be reviewed before and significant improvements are made. Under the highest forecast scenarios, aviation-related rental car demand would be approximately 60 cars per day which is well below the 100 spaces currently available.

Recommendation for Rental Car Parking: There is no recommendation for additional rental car parking.

5.5. GENERAL AVIATION AND LANDSIDE FACILITY REQUIREMENTS

The existing GA areas are located on the southeast and west sides of the Airport. This section discusses the requirements for each of the GA elements while the Alternatives chapter (Chapter 6) will explore the future location of the required facilities. Requirements for GA facilities at HYA were calculated on the basis of data collected during the inventory, forecasts, consultation with Airport staff, as well as FAA standards. The following facilities were examined:

- General Aviation Aircraft Hangars
- Aircraft Parking Ramps
- General Aviation Automobile Parking
- Airport Administrative/Operations Offices

5.5.1. General Aviation Aircraft Hangars

GA hangars at an airport are planned for both based and itinerant aircraft. Requirements are calculated based on the size and quantity of aircraft based at the Airport. While each aircraft will vary in size, the following planning factors were used to calculate the approximate hangar space requirements for aircraft based at the Airport:

- 1,200 SF for Single Engine and Rotor Aircraft
- 1,600 SF for Multi-Engine Aircraft
- 3,200 SF for Jet Aircraft

When calculating hangar demand, it is assumed that 70 percent of single engine and 35 percent multi-engine aircraft will be stored in individual hangars. It is also assumed that 25 percent of single engine aircraft, 60 percent of multi-engine aircraft, and 100 percent of jet aircraft will be stored in conventional hangars.

The forecast for based aircraft reflects a 0.4 percent decline of total based aircraft based on the historical trends of the Airport. These trends represent a small increase in small jet growth but the consolidation of light GA aircraft because of flying clubs and fractional ownership. More people will use based aircraft, which is why based aircraft numbers may decline, but aircraft operations increase. Existing hangar space is shown in **Table 5-32**. The overall hangar requirements are displayed in **Table 5-33.**

There are currently empty hangar spaces. However, this is at the desire of the hangar owner. There are also currently 17 people on the waitlist for t-hangars. These may or may not come to fruition at a higher price point. To accommodate those on the waitlist as well as any that may be added onto the waitlist during the planning period, an additional six individual hangars and two conventional hangars should be constructed above and beyond the baseline demand summarized in **Table 5-33**.

Additionally, HYA is in the optimal position to serve new businesses on Cape Cod. Therefore, the Airport should have a provision of two to four conventional hangars to provide the necessary space for a new business to utilize HYA.

PLANNING CONSIDERATION

Future hangar development should consider longer wingspans, which are a feature of modern single- and multi-engine aircraft. The typical t-hangar door width is 42 feet and modern ADG I aircraft have wingspans of 44 – 48 feet.

Recommendation for Aircraft Hangars: There is an existing shortage of conventional hangar space, which should be accommodated. Should demand exceed what is forecast, it is recommended to plan for six individual hangars and up to eight new conventional hangars to account for unplanned growth and new businesses.

Table 5-32: Existing Hangar Facilities

Building Number	Owner (Lessee)	Individual Hangar Units	Conventional Hangar Space in SF (% used for Aircraft Storage)
1	Ross Rectrix Aerodrome Center	N/A	35,000 SF (10%, Primarily for itinerant use)
2	HYA Fleet Hangar (Leased by Hyannis Air Service AKA Cape Air and Nantucket Airlines)	N/A	39,500 SF (0%, Primarily used for fleet maintenance)
3	Griffin Avionics	N/A	19,000 SF (0%, Primarily used for aircraft maintenance)
4	HYA Hangar II (Leased Cape Air)	N/A	12,500 SF (0%, Primarily used for office and storage space)
6	Airline Realty Trust (Leased by Allies Aviation)	N/A	5,000 SF (70%, 30% Itinerant use)
7	Hangar 51 LLC (Leased by Allies Aviation)	N/A	10,500 SF (70%, 30% Itinerant use)
13	Air Cape Cod	N/A	6,000 SF (50%, Itinerant use)
16	Airport T-hangar (Individual Leases)	7 (6 available for aircraft storage)	N/A
17	Aero Management Association (AMA), Inc (Individual Leases)	3	N/A
18	Cape Flight Instruction Inc.	N/A	7,500 SF (100%)
19	Hyannis Hangar LLC (Individual Leases)	8	N/A
20	Hexagon Hangars (Privately Owned) (Individual Leases)	6	N/A
21	Kingsbury Aviation (Individual Leases)	4	N/A
22	Kingsbury Aviation (Individual Leases)	6	N/A

Source: Airport Management; McFarland Johnson, 2020.

Table 5-33: Aircraft Hangar Demand

Year	Facility Demand	Current Provision	Additional Need
Baseline			
Individual Hangars	28	33	0
Conventional Hangars	27,860 SF	24,850 SF	3,010 SF
2025			
Individual Hangars	27	33	0
Conventional Hangars	28,220 SF	24,850 SF	3,370 SF
2030			
Individual Hangars	25	33	0
Conventional Hangars	27,620 SF	24,850 SF	2,770 SF
2040			
Individual Hangars	24	33	0
Conventional Hangars	30,220 SF	24,850 SF	5,370 SF

Source: McFarland Johnson, 2020.

5.5.2. Aircraft Parking Ramps

There are four components that typically determine the required ramp area for GA uses. They are:

1. Based aircraft parking,
2. Itinerant aircraft parking (transient aircraft parking),
3. Aircraft fueling ramp, and
4. Staging and maneuvering areas.

The sum of these components determines the total area of apron required to meet the forecasted level of general aviation activity at the Airport.

Based Aircraft Parking

Based aircraft tie-down requirements were developed in the *Aircraft Hangars* section since they are a factor in determining hangar requirements. All designated based aircraft tie-downs are located on the east side of the Airport.

There are approximately 55 tie-downs available on the East Ramp. During the planning period, it is anticipated that three based aircraft will be stored on tie-downs. Since the existing number of total tie-downs exceeds the future demand throughout the planning period, there is no need to add additional tie-downs.

Recommendation for Based Aircraft Parking: There are no recommendations for additional based aircraft tie-downs.

Transient Aircraft Parking

The second major ramp need is parking space for itinerant aircraft. FAA AC 150/5300-13A suggests one methodology for determining ramp space requirements for transient aircraft. This

methodology has been adjusted as outlined below to reflect seasonal demand conditions at the Airport and is used to project future transient ramp space requirements.

- Calculate the transient aircraft by assuming all GA itinerant and 50 percent of annual air taxi operations
- Calculate the total peak month design day operations for transient operations using an 11.5 percent peak month factor.
- Calculate itinerant arrivals on the design day assuming that half of the operations are arrivals.
- Assume that approximately 75 percent of these aircraft will require transient parking space during the course of the day. The other 25 percent of the itinerant arrivals are based aircraft that will return to their designated parking areas on the airport (hangar).
- Assume an overnight factor that up to that up to 50 percent will remain one night, 25 percent will remain two nights, and 10 percent will remain three nights.
- Allow an area of 3,600 SF per transient airplane, due to the need for taxiing space and aircraft of different sizes.

Table 5-34 presents the results of these computations. According to the above methodology, approximately 372,000 SF of apron space is currently required for transient parking. By the end of the planning period this need is forecast to increase to approximately 424,000 SF.

Table 5-34: Transient GA Aircraft Apron Area Demand

Year	Peak Month Transient Operations	Daytime Transient Parking Demand (# of Tie-Downs)	Overnight Transient Parking Demand (# of Tie-Downs	Required Transient Ramp Space (SF)	Additional Need (SF)
Baseline	4,616	56	48	371,871	2,371
2025	4,694	57	49	378,185	8,685
2030	4,855	59	50	391,114	21,614
2040	5,260	64	54	423,773	54,273

Source: McFarland-Johnson Analysis, 2020.

Transient aircraft are parked on both the North and East Ramps. Total ramp space for transient aircraft is approximately 369,500 SF.

Recommendation for Transient Aircraft Parking: It is recommended that between 40,000 SF and 67,000 SF of additional apron space be built (location and configuration/operational flow will determine actual size requirements).

Aircraft Fueling Ramp

There are three aviation fuel storage facilities at the Airport. Currently, there are no self-fueling options at the Airport. All access to fuel tanks is done by fuel trucks and fueling ramps do not need to accommodate aircraft. Should this change, a ramp would need to be constructed to accommodate single engine aircraft utilizing 100LL Avgas fuel.

Recommendation for the Aircraft Fueling Ramp: Should 100LL Avgas self-service fueling be constructed at the Airport, a fueling ramp should accommodate the maneuvering of multi-engine aircraft while still maintaining safety clearances.

Staging and Maneuvering Areas

Adequate space for the safe maneuvering of aircraft to and from ramps, hangars, and taxiways must also be included in any forecast of apron requirements. Staging and maneuvering is most closely associated with the provision of space in front of conventional hangars and between rows of box and t-hangars. **Table 5-35** shows the taxiway and taxilane object free area requirements (TOFA and TLOFA, respectively).

Currently, there are several non-standard TLOFAs on the East Ramp of the Airport. These non-standard conditions are show in **Figure 5-11**. These individual hangars are constructed for small, general aviation aircraft and should meet ADG I taxiway and TLOFA requirements.

Table 5-35: Taxiway/Taxilane Design Standards by ADG

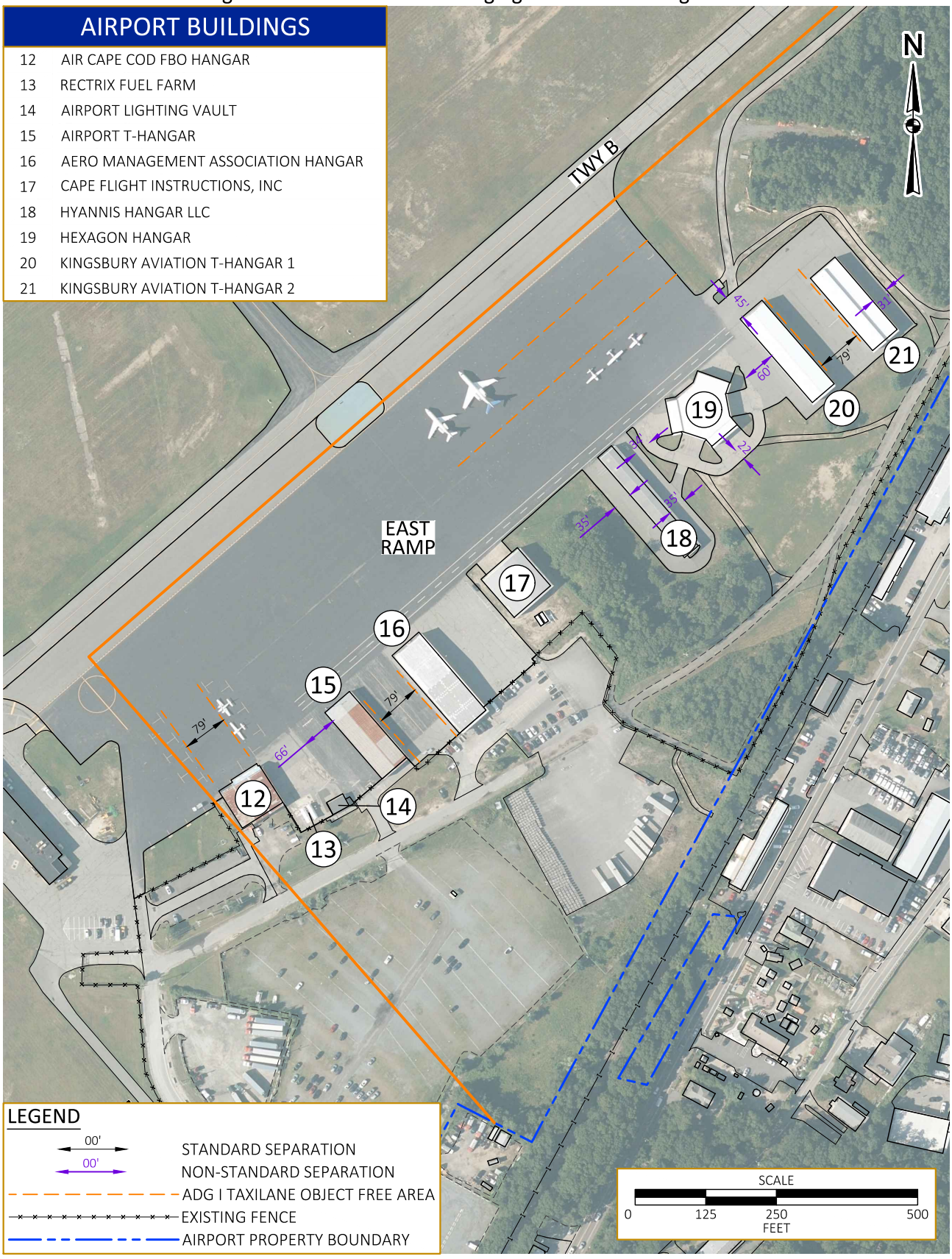
ADG	I	II	III
Taxiway OFA	89’	131’	186’
Taxilane OFA	79’	115’	162’
Taxilane centerline to parallel taxilane centerline	64’	97’	140’
Taxilane centerline to fixed or moveable object	39.5’	57.5’	81’
Taxilane wingtip clearance	15’	18’	22’

Source: FAA AC 150/5300-13A.

The following areas with TLOFA less than 79 feet are present on the East Ramp. These are not necessarily non-standard, but include limitations of wingspans less than ADG I aircraft to meet standard wingtip clearances.

- There is a 66-foot clearance southwest of Building 15. As presently constructed, this taxilane provides standard wingtip clearance for aircraft up to wingspans of 36 feet (this represents approximately 47 percent of all ADG I aircraft). Aircraft with larger wingspans are expected to take caution and visually confirm adequate clearance from objects.
- On either side of Building 18 there is 35 feet of pavement. Pilots should proceed with caution and visually confirm adequate clearance from objects.
- Between Buildings 18 and 20, pilots should proceed with caution and visual confirm adequate clearance from objects and aircraft before taxiing.
- Taxilanes surrounding Building 19 are 22 feet wide, which does not meet TDG 1A and 1B 25-foot width standards.
- There is 45-foot wide pavement northwest of Building 20. As presently constructed, this taxilane provides standard wingtip clearance for aircraft up to wingspans of 35 feet (this represents approximately 35 percent of all ADG I aircraft). Aircraft with larger wingspans are expected to take caution and visually confirm adequate clearance from objects.
- There is 31-foot wide pavement northeast of Building 21. Pilots should proceed with caution and visually confirm adequate clearance from objects.

Figure 5-11: Non-Standard Staging and Maneuvering Areas



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Recommendation for Staging and Maneuvering Areas: Correct non-standard taxilane widths and clearances during the next reconstruction of pavement and/or buildings.

5.5.3. General Aviation Automobile Parking

There are two GA hangar areas on the Airport which provide multiple automobile parking lots adjacent to the buildings for their users.

The methodology used below is based on a previously completed Aircraft Owners and Pilots Association (AOPA) survey that found an average of 2.5 persons aboard the average GA operation and automobile parking requirements for GA operations are displayed in **Table 5-36**.

- Determine the number of peak hour operations from the *Forecasts* chapter.
- Determine the number of peak hour pilots and passengers by multiplying the number of peak hour operations by 2.5.
- Determine the number of parking spaces for individual unit hangars needed by dividing the number of units by 2.
- Determine the number of parking spaces needed for conventional hangars by dividing the total SF of conventional hangar space used by based by 1,000, the total SF of space used for maintenance by 750, and the total SF of space used for offices by 200.
- Assume the number of parking spaces needed for GA terminal use is one space for every 200 SF of GA terminal space recommended by Airport Cooperative Research Program (ACRP) Report 113.

As shown, a need of 331 parking spaces is identified for based and transient GA operations at the Airport through 2040. There are currently ten automobile parking lots for GA operations: five on each the North and East Ramps. Within the North Ramp parking areas, there are 145 marked parking spaces. Within the East Ramp parking areas, there are 56 marked parking spaces along with three unmarked parking areas with space for at least 50 cars. Therefore, the need of 331 parking spaces by the end of the planning period exceeds the current provision of 251 spaces, 201 marked parking spaces plus 50 unmarked parking spaces.

Table 5-36: GA Automobile Parking Space Requirements

Year	Conventional Hangar Parking Demand (# of Parking Spaces)	Individual Unit Hangar Parking Demand (Based) (# of Parking Spaces)	Transient and GA Terminal Parking Demand (# of Parking Spaces)	Total Parking Demand (# of Parking Spaces)	Additional Need (# of Parking Spaces)
Baseline	238	17	55	313	59
2025	239	17	60	319	65
2030	238	17	64	322	68
2040	241	17	73	331	80

Source: McFarland Johnson, 2020.

Recommendations for GA Automobile Parking: The addition of 80 automobile parking spaces by 2040 is recommended to meet both current and future need. Should additional unplanned growth

or new businesses come to the Airport, GA automobile parking will need to accommodate the demand and spaces should be added.

5.5.4. Airport Administration/Operations Offices

There are no self-standing Airport administrative offices at the Airport. These offices are in the passenger terminal building. Operations staff also provide ARFF service; therefore, operations and ARFF are staffed in a shared building. Currently, space is shared between ARFF/operations and the public. The Airport's ultimate plan is to separate ARFF/operations from space utilized by the public.

Recommendation for Airport Administration/Operations Offices: Create a separation between ARFF/operations and the public.

5.6. SUPPORT FACILITIES AND UTILITIES

5.6.1. Aviation Fueling

As noted in Chapter 2, *Inventory*, HYA offers both Jet A and 100LL Avgas fuel. **Table 5-37** shows existing fuel storage tanks at the Airport.

Table 5-37: Existing Fuel Capacity

	Jet A	100LL Avgas
HYA Airport	3 x 20,000 gallons	-
Ross Rectrix/Air Cape Cod	10,000 gallons	10,000 gallons
Griffin Avionics	-	2 x 10,000 gallons
Total	**70,000 gallons**	**30,000 gallons**

Sources: Airport management and McFarland Johnson analysis, 2019.

On average, the Airport received approximately 9,900 gallons of Jet A fuel every two to three days during the peak month. In 2019, the average three-day Jet A fuel consumption was 8,300 gallons and 20,800 gallons per three-day period during peak month. The Airport has an average of almost a month supply during average months and over a week supply of Jet A fuel during peak month as shown in **Table 5-38**.

QUALITATIVE PERSPECTIVE

Cape Air has ordered electric aircraft, putting the Airport at the forefront of electric aviation. Portions of apron adjacent to the passenger terminal should be reserved to support the needs of both commercial and general aviation electric aircraft.

During the 2019 peak season, Griffin Avionics sold approximately 11,000 gallons of 100LL Avgas per month while Rectrix sold approximately 4,300 gallons of 100LL Avgas per month. The Airport has approximately a one-month supply during peak season and an even greater supply during the remaining months of the year.

Currently, all aircraft fueling is provided via full-service fuel trucks. There is a desire for the Airport to put in a self-service 100LL Avgas fuel tank. It is anticipated that with increased fuel efficiency, fuel demand will remain similar during the planning period. However, if scheduled passenger

service increases significantly, or changes to the type of aircraft occur, additional fuel demand may warrant additional fuel tanks.

Table 5-38: 2019 Fuel Calculations

	Jet A (gallons)	100LL Avgas (gallons)
Existing Storage Supply	70,000	30,000
2019 Peak 7-day Demand	44,607	4,993
2019 Peak 14-day Demand	89,214	9,987
Additional Need	0 - 19,214	0

Sources: HYA, Rectrix, and McFarland Johnson, 2020.

The future of electric aircraft presents potential opportunity for the Airport. Cape Air intends to operate electric aircraft in the next decade.

Recommendations for Aviation Fueling: All underground fuel tanks are recommended to be dug out and made to be above ground tanks. If necessary, consider constructing an additional Jet A fuel tank. As noted in **Section 5.5.2**, it is also recommended that a self-service 100LL Avgas option be provided. The Airport should plan a location and parking for the charging of itinerant ADG II electric aircraft.

5.6.2. Air Traffic Control Tower (ATCT)

The current ATCT is located southeast of the terminal building along the Terminal Ramp. It is operated between 6:00 a.m. and 10:00 p.m. local time. the ATCT at the Airport is a federal contract tower owned by the Airport and operated by Midwest Air Traffic Control Services. While the ATCT is operating, all aircraft within HYA's Class D airspace are provided radar services below 2,600 feet mean sea level. Prior to operating in the Airport's airspace, pilots must establish two-way radio communication with the ATCT to enter the Class D airspace.

As noted in Chapter 2, *Inventory*, of this Master Plan, the Airport underwent big transformations in 2011 and 2012 including the reconstruction of a new ATCT. The ATCT houses its own backup generator should the tower lose power. The building as currently constructed meets FAA requirements.

Recommendation for ATCT: There are no changes to the ATCT recommended.

5.6.3. Aircraft Rescue and Fire Fighting

As discussed in Chapter 2, *Inventory*, of this Master Plan, the ARFF station at the Airport is a multi-use ARFF/maintenance/SRE facility and operates as an Index A under FAR Part 139. However, during JetBlue operations, the Airport operates as an Index B. The ARFF station is located on the East Ramp with access to Taxiway B. The station vehicles are shown in **Table 5-39**. Vehicle 816 was replaced in 2020.

The ARFF space of the facility occupies approximately 3,000 SF of the total 15,000 SF building. Overall, the building was in poor condition and in need of a roof replacement at the assessment. Repairs were completed in 2020. The leaks from the roof have left indoor spaces unusable and

damaged from water. The environmental filtering system within the building is also broken and unable to be repaired due to the old age of the system.

Table 5-39: Airport ARFF Equipment

Vehicle Call Sign	Year	Condition	Make/Model	Index	Storage Location
820	1992	Fair	E-One Titan	B	ARFF/SRE
817	2006	Good	E-One Titan	B	ARFF/SRE
816	1999/ 1998	Poor	Ford F-450 / 11102; Fire Combat Skid Plate & Fire Compression System	A	Outside ARFF/SRE

Source: Cape Cod Gateway Airport, 2019.

The building should be large enough to house all ARFF vehicles. Currently, one ARFF vehicle is being stored outside.

Recommendations for ARFF: The ARFF facility needs to be updated and damage needs to be repaired to spaces ruined by the leaking roof; the leaking roof was replaced 2020. The building should be big enough to accommodate all vehicles.

5.6.4. Airfield Maintenance Facility and Snow Removal Equipment (SRE)

The Airport operations staff performs the day-to-day responsibilities of maintaining and inspecting the airfield facilities, including the removal of snow during winter months. The existing number of maintenance and snow removal equipment, along with the number of Airport Improvement Program (AIP) eligible vehicles, is shown in **Table 5-40**.

Table 5-40: Maintenance Equipment and SRE

	Number of Existing Vehicles	Number of Existing Vehicles Older than 10 years	Number of AIP Eligible Vehicles
Maintenance	24	14	0
Snow Removal	15	10	7
Total	39	24	7

Sources: Cape Cod Gateway Airport Management and McFarland Johnson, 2021.

Storage space in the ARFF/maintenance/SRE building is limited and many vehicles are stored outside.

Per FAA AC 150/5220-20A, *Airport Snow and Ice Control Equipment*, the Airport is eligible for the following:

- One rotary plow
- Two displacement plows
- Two sweepers
- Two hopper spreaders

The existing maintenance/SRE storage building spans is comprised of approximately 12,000 SF of the joint ARFF/maintenance/SRE facility. With approximately 1.6 million SF of paved runway, per FAA AC 150/5220-18A, *Buildings for Storage and Maintenance of Airport Snow and Ice Control Equipment and Materials*, the Airport is classified as a very large airport or one with over 1 million SF of paved runway. As a very large airport, HYA is eligible for an SRE building of approximately 20,000 SF.

While maintenance equipment other then SRE is not eligible to be purchased with FAA AIP funds, the Airport should plan for a facility that can store the entire Airport fleet of equipment. This may require alternate funding sources for portions of the storage and maintenance facility that are not eligible for AIP funds.

Any changes recommended to this building should include an expansion so all ARFF/maintenance/SRE vehicles can be stored indoors to maximize their useful life.

Recommendation for Equipment and Airfield Maintenance and SRE Facility: Airfield maintenance and SRE equipment should be maintained or replaced, as needed, throughout the planning period. The Airport should plan for a building of approximately 20,000 SF to house maintenance equipment/SRE (compared to existing 12,000 SF).

5.6.5. Utilities

There is a separate utility study being conducted. The utility study can be found in **Appendix J**. At this time, there are no issues to be seen. The Airport currently has a backup generator for the terminal building as well as backup generators for the airfield should power ever go down.

Recommendation for Utilities: It is recommended that with any new utility projects, a survey and updated mapping is completed.

5.7. FACILITY REQUIREMENTS SUMMARY

This section summarizes all facility requirements for the Airport as shown in **Table 5-41**.

Table 5-41: Facility Requirements Summary

Item/Facility	Existing Facility or Capacity	Ultimate Requirement	Additional Need
Runway Length (Section 5.2.2)	Runway 15-33 – 5,253’ Runway 6-24 – 5,425’	One or both runway 6,000’-6,400’	575’-1,147’
Runway Width (Section 5.2.3)	Runway 15-33 – 150’ Runway 6-24 – 150’	Runway 15-33 – 150’ Runway 6-24 – 150’	None
Runway Strength and Condition (Section 5.2.4)	Runway 15-33 – 43 F/A/X/T Runway 6-24 – 32 F/A/X/T	Runway 15-33 – 43 F/A/X/T Runway 6-24 – 32 F/A/X/T	Potential Runway 6-24 strengthening
Runway Orientation (Section 5.2.5)	Runway 15-33 – C-III Runway 6-24 – C-III	Runway 15-33 – C-III Runway 6-24 – C-III	None

Item/Facility	Existing Facility or Capacity	Ultimate Requirement	Additional Need
Runway Safety Areas (Section 5.2.6)	Portions of Runways RSAs off Airport property	Provide standard RSA on all runways	Control of all RSA through ownership
Runway Object Free Areas (Section 5.2.7)	Portions of Runways ROFAs off Airport property	Provide standard on all runways	Control of all ROFA through ownership or avigation easements
Runway Protection Zones (Section 5.2.8)	Partially under Airport control through ownership and avigation easements	Under airport control through ownership or avigation easements	Control of all RPZs through ownership or avigation easements
Runway Visibility Zone (Section 5.2.9)	Half of the length between each runway end and the runway intersection	Half of the length between each runway end and the runway intersection	None
Runway Pavement Markings (Section 5.2.10)	Runway 15-33 – Precision Runway 6-24 – Precision	Runway 15-33 – Precision Runway 6-24 – Precision	None
Taxiways (Section 5.2.11)	Runway 15-33 – Full Parallel Runway 6-24 – Full Parallel Non-standard TSA/TOFA	Runway 15-33 – Full Parallel Runway 6-24 – Full Parallel Standard TSA/TOFA	Meet FAA standards
Taxiway Width (Section 5.2.11)	40’ – 65’	50’ – 75’	Meet TDG 3 guidelines
Passenger Terminal Ramp (Section 5.2.12)	160,000 SF	Meet Demands of Future Design Aircraft	Potentially reconfigure Terminal Ramp to accommodate future design aircraft
Potential Hot Spots and Geometry Requirements (Section 5.2.13)	See **Table 5-27**	Meet FAA geometry standards	Address airfield geometry concerns
Runway Lighting and Signage	Runway 15-33 – HIRLs	Runway 15-33 – HIRLs Standard Runway 15 threshold lights	Address Runway 15 threshold lights

Item/Facility	Existing Facility or Capacity	Ultimate Requirement	Additional Need
(Section 5.2.14)	Non-standard Runway 15 threshold lights Runway 6-24 – HIRLs	Runway 6-24 – HIRLs	
Approach Lighting/ Instrument Approaches (Section 5.2.14)	Runway 15 – ILS/DME, GPS Runway 33 – GPS Runway 6 – GPS, VOR Runway 24 – ILS/DME, GPS	Runway15 – ILS/DME, GPS Runway 33 – GPS Runway 6 – GPS, VOR Runway 24 – ILS/DME, GPS	None
Taxiway Lighting (Section 5.2.14)	Taxiways A, Portion of B, C, D – HITLs Portion of Taxiway B - MITLs Taxiway E - Unlit	All taxiways lit or marked with reflective markers	Add MITLs or reflective markers to Taxiway E
Runway Visual Aids (Section 5.2.15)	Runway 15 – None Runway 33 – PAPI Runway 6 – PAPI Runway 24 – PAPI	Runway 15 – PAPI Runway 33 – PAPI Runway 6 – PAPI Runway 24 – PAPI	Add PAPI to Runway 15
Terminal Facility (Section 5.3)	30,620 SF	150 Peak Passengers: 35,000 – 40,000 SF 200 Peak Passengers: 50,000 – 55,000 SF	5,000 – 25,000 SF
Airport Access and Signage (Section 5.4.1)	4 Ways of Access	Direct Route to Airport	Review Direct Route to Airport Improve Wayfinding
Terminal Area Parking (Sections 5.4.2 and 5.4.3)	1,085 Spaces	1,085 Spaces	None
Hangars (Section 5.5.1)	33 Individual Units 24,850 SF Conventional Space	24 Individual Units 30,220 SF Conventional Space	None 5,370 SF Conventional Space
GA Transient Ramp (Section 5.5.2)	369,500 SF	423,773 SF	40,000 SF – 67,000 SF
GA Auto Parking (Section 5.5.3)	201 Paved Spaces 50+ Unpaved Spaces	331 Spaces	80 Spaces
Aviation Fueling (Section 5.6.1)	30,000 Gallons 100LL Avgas 70,000 Gallons Jet A	30,000 Gallons 100LL Avgas 70,000 Gallons Jet A	Consider Adding a Jet A Fuel Tank

Item/Facility	Existing Facility or Capacity	Ultimate Requirement	Additional Need
			Add 100LL Avgas Self-Fueling Plan a Location for 6 ADG II Electric Aircraft Charging Stations
ATCT (Section 5.6.2)	Operated 6:00 a.m. – 10:00 p.m.	Operated 6:00 a.m. – 10:00 p.m.	None
ARFF (Section 5.6.3)	Operates as Index A except for JetBlue flights when it operates as Index B; 3,000 SF of building space	Operates as Index A except for JetBlue flights when it operates as Index B; 3,000 SF of building space	Repair interior damage caused by leaking roof (replaced in 2020)
Maintenance and SRE (Section 5.6.4)	12,000 SF of building space	20,000 SF of building space	Increase size of building by 8,000 SF

Source: McFarland Johnson Analysis, 2020.

Cape Cod Gateway Airport

Airport Master Plan

Alternatives

McFarland Johnson

6. Alternatives

This Alternatives chapter documents a variety of proposed development scenarios to accomplish the recommended facility improvements identified in Chapter 5, *Facility Requirements.* It evaluates the scenarios against several evaluation factors as well as through different levels of screenings to determine how best to strike a balance between safety, environmental/community impacts, operational needs, and project implementation cost. The evaluation factors and screening levels used to compare development options were selected based on specific considerations associated with the Cape Cod Gateway Airport (HYA or the Airport).

From a Federal Aviation Administration (FAA) standpoint and prioritization, airside alternatives are considered first, followed by an evaluation of terminal alternatives, and then general aviation (GA) areas and support facilities. Each of these areas are evaluated within this chapter starting with the No Build Alternative, followed by other potential alternatives considered. The preferred alternatives are selected based on assessed criteria, their compatibility with one another, ability to correct non-standard FAA geometry or design conditions, screening factors, and the overall airport environment. These individual alternatives are then combined to create an overall Preliminary Recommendation for the Airport Layout Plan (ALP).

A summary of the Airside Facility Requirements is outlined below with background and additional detail outlined in the following sections:

- Airside Alternatives
- Terminal Alternatives
- General Aviation Alternatives
- Support Facilities
- Green Opportunities
- Preliminary Recommendation for the Airport Layout Plan

6.1. AIRSIDE FACILITY REQUIREMENTS SUMMARY

In Chapter 5, *Facility Requirements*, airside improvements were identified that should be addressed to accommodate the non-standard FAA geometry or design conditions and projected growth anticipated over the next 20 years. These improvements are shown in Table 6-1.

Table 6-1: Summary of Airside Recommendations

FAA Standard	Recommendation	More Details
Airfield Capacity	• Extend a runway to accommodate Weight Class C aircraft (existing capacity is 12-27% of Weight Class C aircraft (weighing 12,500-300,000 pounds) in wet[1] runway pavement conditions) • The Airport should maintain C-III standards for both Runway 15-33 and Runway 6-24 to improve flexibility and capacity at the Airport.	Section 5.2.1

FAA Standard	Recommendation	More Details
Runway Length	• Extend one or both runways to 6,000 - 6,400 feet of useable distance for a family of aircraft (both GA and commercial) (existing Runway 6-24 is 5,425 feet long and Runway 15-33 is 5,253 feet long)	Section 5.2.2
Runway Safety Areas, Runway Object Free Areas, Runway Protection Zones	• Review alternatives for incremental improvements and enhanced land use controls by the Airport per Federal Aviation Administration (FAA) standards; establish a policy for incremental safety enhancements in future projects	Sections 5.2.6 – 5.2.8
Taxiways	• Widen Taxiway B to meet taxiway design group 3 standards to optimize existing and future aircraft movement • Review Taxiways A, B, and E object free areas for improvements	Section 5.2.11
Passenger Terminal Ramp	• Plan for a second aircraft parking position based upon a potential increase in passenger service or changes to the type of aircraft using the terminal could trigger reconfiguration	Section 5.2.12
Airfield Geometry	• Resolve the areas of non-standard geometry to meet FAA standards as much as practicable	Section 5.2.13
Airfield Lighting	• Add a precision approach path indicator (PAPI) to Runway 15 to improve the visual approach capabilities • Resolve Runway 15 threshold light separation • Add medium intensity taxiway lights (MITLs) or reflective markers to Taxiway E	Section 5.2.15

[1] Does not account for snow, ice, or other contamination factors.
[2] Useable runway length is based on declared distances, which protects for safety areas prior to the landing threshold and beyond the end of the runway
Source: McFarland Johnson analysis, 2021.

6.2. AIRSIDE ALTERNATIVES

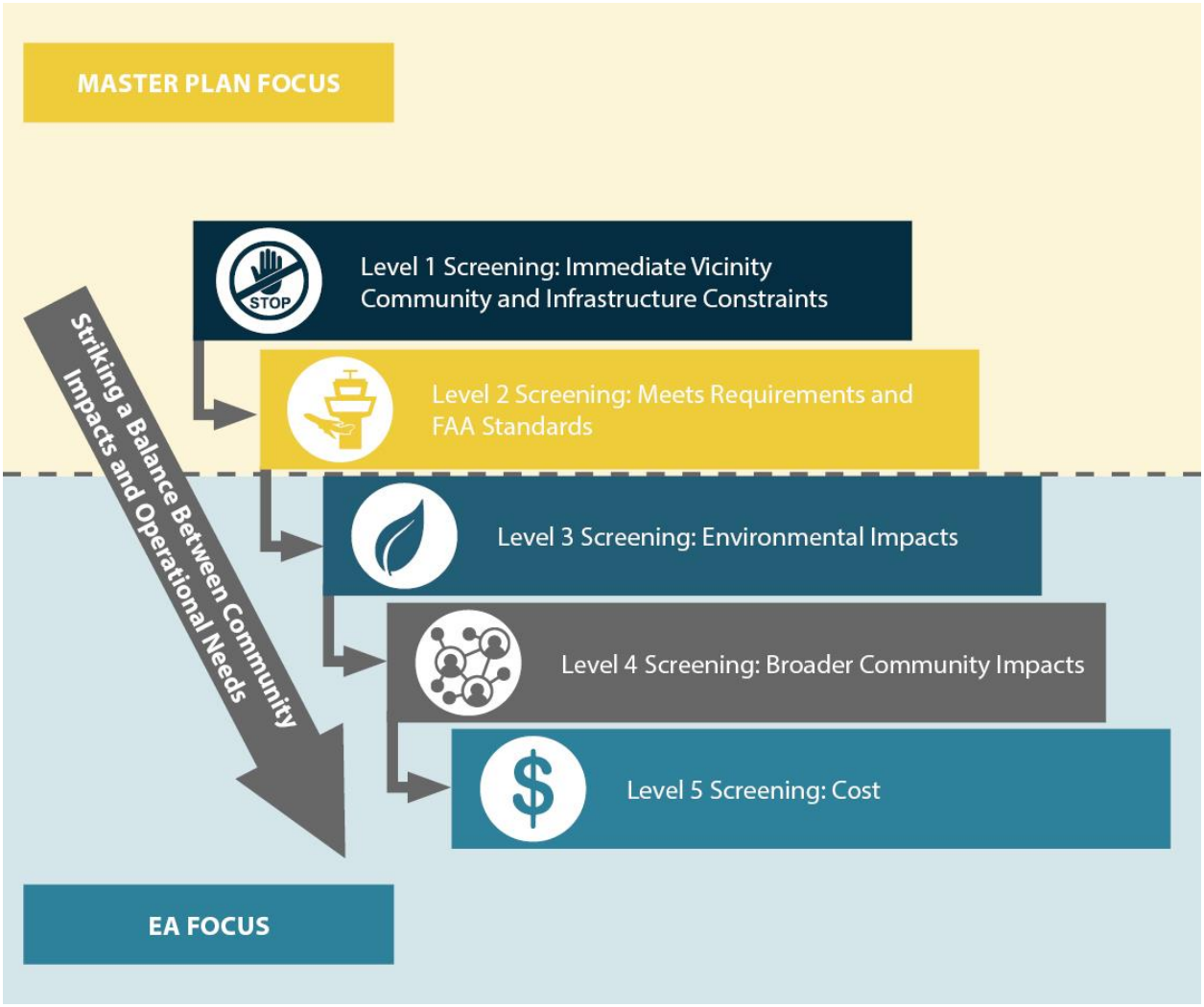
Airside alternatives present potential solutions to non-standard FAA geometry or design conditions as identified in Chapter 5, *Facility Requirements*. The array of alternatives presented were evaluated against five screening level criteria, as shown in **Figure 6-1**. Those alternatives that meet the screening level criteria and are deemed reasonable and feasible are advanced to create a preliminary airside recommendation (the Proposed Action) for the Airport.

The five screening criteria have been developed to provide a tiered assessment of each alternative. Each alternative must pass one level of screening before proceeding to the next, pass or fail criteria. The alternative must also be reasonable, feasible, and practicable that might accomplish the objectives of a project. These five screening criteria consist of the following:

- **Level 1:** Does the Alternative Cause Immediate Vicinity Community and Infrastructure Impacts?
- **Level 2:** Does the Alternative Meet Requirements and FAA Standards?
- **Level 3:** Does the Alternative Impact the Natural Environment?
- **Level 4:** Does the Alternative Impact the Broader Community?
- **Level 5:** How Does the Alternative Rank for Costs?

The goal of the screening criteria is to strike a balance between minimizing immediate vicinity community and infrastructure constraints, meeting facility requirements and FAA standards, minimizing environmental impacts, minimizing broader community impacts, and being cost efficient. Additional community and environmental impacts will be reviewed in further detail in the Cape Cod Commission review, Massachusetts Environmental Policy Act (MEPA) review, and Environmental Assessment (that will be prepared is based upon the National Environmental Policy Act (NEPA)) processes, which all start after the Master Plan is completed.

Figure 6-1: Screening Criteria



Source: McFarland Johnson, 2021.

6.2.1. Level 1 Screening: Immediate Vicinity Community and Infrastructure Constraints

Level 1 Evaluation Criteria

Level 1 screening reviews alternatives that have community and infrastructure constraints in the immediate vicinity. The following were evaluation criteria used to determine if an alternative moved forward to Level 2 screening:

- Creates Disproportionate Burden: Shortening of either one of the two runways to be less than the existing lengths at the Airport (either the physical pavement or useable runway distance, such as declared distances), would result in an increase in larger aircraft operations using one runway (instead of balanced use between both runways in existing conditions). Shortening one runway to be less than its existing length would shift greater than ten percent of existing aircraft operations to the longer runway and put a disproportionate burden on neighborhoods located near the runway that remains intact. Any alternative with a physical or useable runway shortening does not pass Level 1 screening criteria.

- Has Immediate Vicinity Community and Infrastructure Constraints: The Airport is surrounded by public infrastructure. On the northwest side of the Airport (Runway 15) is Independence Drive. On the southwest side of the Airport (Runway 6) are both Iyannough Road and Barnstable Road. The southeast side of the Airport (Runway 33) is bounded by Mary Dunn Way, Iyannough Road, Yarmouth Road, and railroad tracks. The northeast side of the Airport (Runway 24) is next to Yarmouth Road and railroad tracks. The immediate vicinity community would be adversely impacted should any road or railroad need to be relocated. This would also require extensive land acquisition and relocation of houses and businesses. Any alternative that shows relocating major roads or railroads, as well as significant Airport infrastructure, does not pass Level 1 screening criteria.

- Exceeds Runway Safety Area (RSA) Maximum Feasible Cost (applies to RSA alternatives only): The FAA identifies a maximum feasible cost to improve RSAs in Order 5200.9, Financial Feasibility and Equivalency of Runway Safety Area Improvements and Engineered Materials Arresting System. Per FAA Order 5200.9 Figure 4, the maximum feasible RSA improvement cost for Runway 6-24 is approximately $14.5 - $17.5 million based on an estimated engineered materials arresting system (EMAS) length of 330 to 400 feet (the final EMAS length is determined by the manufacturer during the engineering design phase). Cost estimates were not created for all alternatives; only those RSA alternatives that could come close to the RSA maximum feasible costs include a planning-level cost estimate. Any RSA alternative that exceeds $17.5 million for RSA improvements does not pass Level 1 screening criteria.

Level 1 Runway 6-24 RSA Alternatives Executive Summary

An extensive review of the Runway 6-24 safety area was conducted as part of this Master Plan. Appendix K describes the initial alternatives reviewed and provides the full presentation of alternatives after FAA and Massachusetts Department of Transportation (MassDOT) feedback. A

summary of the alternatives considered in Level 1 screening are shown in **Table 6-2**. Based on this review, only the No Build and Runway 24 EMAS pass to Level 2.

Table 6-2: Level 1 Screening Summary

Alternative	Creates Disproportionate Burden	Has Immediate Vicinity Community and Infrastructure Impacts	Exceeds Maximum Feasible Cost Impacts	Passes Level 1
Alternatives to Meet Runway 6-24 FAA RSA Alternatives				
No Build	No	No	No	**Yes**
Provide Full Dimension RSA	No	Yes	Yes	No
Reduce Runway 6-24 to 4,028 feet	Yes	No	No	No
Relocate Runway 6-24	No	Yes	Yes	No
Realign Runway 6-24 Alt. 1	No	Yes	Yes	No
Realign Runway 6-24 Alt. 2	No	Yes	Yes	No
Shifting Runway 6-24	No	Yes	Yes	No
Apply Declared Distances	Yes	No	No	No
Change Operational Characteristics	Yes	No	No	No
Install Runway 24 EMAS	No	No	No	**Yes**
Extend Runway 24	No	Yes	Yes	No
Extend Runway 6	No	Yes	Yes	No
Runway 15-33 RSA Constraints				
Runway 15 RSA Off Airport Property	No	Yes	N/A	No
Runway 33 RSA Off Airport Property	No	Yes	N/A	No

Source: McFarland Johnson analysis, 2021.

Level 1 Runway 15-33 RSA Constraints

The following Runway 15-33 RSA constraints were identified to prevent any immediate vicinity community and infrastructure impacts.

- **Runway 15 RSA Off Airport Property:** Extending the Runway 15 RSA off Airport property would require the relocation of Independence Drive.
  - **Has Immediate Vicinity Community and Infrastructure Impacts:** Runway 15 is constrained by Independence Drive.
  - **Result**: Additional runway length at Runway 15 will be limited to keeping the RSA on Airport property.

- **Runway 33 RSA Off Airport Property:** Extending the Runway 33 RSA off Airport property would require the relocation of Mary Dunn Way.
  - **Has Immediate Vicinity Community and Infrastructure Impacts:** Runway 33 is constrained by Mary Dunn Way.
  - **Result**: Additional runway length at Runway 33 will be limited to keeping the RSA in its current location.

Level 1 Screening Alternatives Moving Forward

Only two alternatives met the evaluation criteria and are being carried forward to Level 2:

- No Build
- Runway 24 EMAS

Additional on-airport alternatives for Runway 15-33, Runway 15-33 taxiways, and Runway 6-24 taxiways are introduced in Level 2 screening.

6.2.2. Level 2 Screening: Meets Requirements and FAA Standards

Level 2 Screening

This screening level looks at individual alternatives created to address one or multiple facility requirements (as identified in Chapter 5) and FAA design and geometry standards (as identified in FAA Advisory Circular (AC) 150/5300-13A). Alternatives in this section were split into three distinct categories:

- **Runway 15-33 Alternatives:** Those alternatives that review if/how the Airport can meet the facility requirements runway length identified. Alternatives were limited by the Runway 15 RSA staying on Airport property and keeping the Runway 33 RSA in its existing location.

- **Runway 15-33 Taxiway Alternatives**: Those alternatives that review how best to address the non-standards geometry of Taxiways E and D with Runway 15-33.

- **Runway 6-24 Taxiway Alternatives:** Those alternatives that review the higher than standard Taxiway B separation from Runway 6-24 and alternatives that review non-standard geometry conditions of taxiways intersecting Runway 6-24.

Level 2 Evaluation Criteria and Executive Summary

After each section, a review was conducted to determine which alternative(s) are carried forward to the Level 3 Screening.

The following evaluation criteria were considered during Level 2 screening and an executive summary table is provided as **Table 6-3**:

- **Meets FAA Standards:** Does the alternative meet the design and geometry standards of FAA AC 150/5300-13A, *Airport Design*, and Code of Federal Regulations (CFR) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace* (Part 77) to the maximum extent feasible?
- **Meets Facility Requirements:** Does the alternative meet the existing and future needs of the Airport and is the alternative feasible for implementation?
- **Is Constructable:** Is the alternative feasible to construct?
- **Has Operational Impacts on Airport:** What effect does this alternative have from an operational standpoint? Does this alternative allow the Airport to operate equally or more efficient? This evaluation criteria applies to taxiway alternatives only.

Table 6-3: Level 2 Screening Summary

Alternative	Meets FAA Standards	Meets Facility Requirements	Is Constructable	Has Operational Impacts on Airport	Passes Level 2
Airside Alt. 1 – No Build	Yes	No	N/A	N/A	No
Runway 15-33 Alt. 2 – Meet All Facility Requirements	No	Yes – On Airport; No – Off Airport	Yes	N/A	No
Runway 15-33 Alt. 3 – Reduced Obstructions, Enhanced Land Use Compatibility	Yes	Yes	Yes	N/A	No
Runway 15-33 Alt. 4 – Meets Most Requirements, Enhanced Land Use Compatibility	Yes	Yes	Yes	N/A	**Yes**
Runway 33 Optimized Access Taxiway	No	Yes	Yes	No	No
Runway 33 EMAS	Yes	Yes	Yes	N/A	**Yes**
Runway 15-33 RSA/ROFA	Yes	N/A	N/A	N/A	**Yes**

Alternative	Meets FAA Standards	Meets Facility Requirements	Is Constructable	Has Operational Impacts on Airport	Passes Level 2
Incremental Improvements					
Runway 15-33 RPZ Incremental Improvements	Yes	N/A	N/A	N/A	**Yes**
Runway 24 EMAS	Yes	N/A	Yes	N/A	**Yes**
Runway 6-24 RSA Determination	Yes	N/A	N/A	N/A	**Yes**
Runway 6-24 RPZ Incremental Improvements	Yes	N/A	N/A	N/A	**Yes**
Runway 15-33 Taxiway Alt. 2	Yes	Yes	Yes	No	**Yes**
Runway 15-33 Taxiway Alt. 3	No	Yes	Yes	No	No
Runway 6-24 Taxiway Alt. 2	Yes	Yes	Yes	Yes	**Yes**

Source: McFarland Johnson analysis, 2021.

Airside Alternative 1 - No Build

This alternative shows no changes to the existing runway and taxiway layout. The No Build alternative is shown in **Figure 6-2**.

The No Build Alternative was assessed against the three evaluation factors; the results are below:

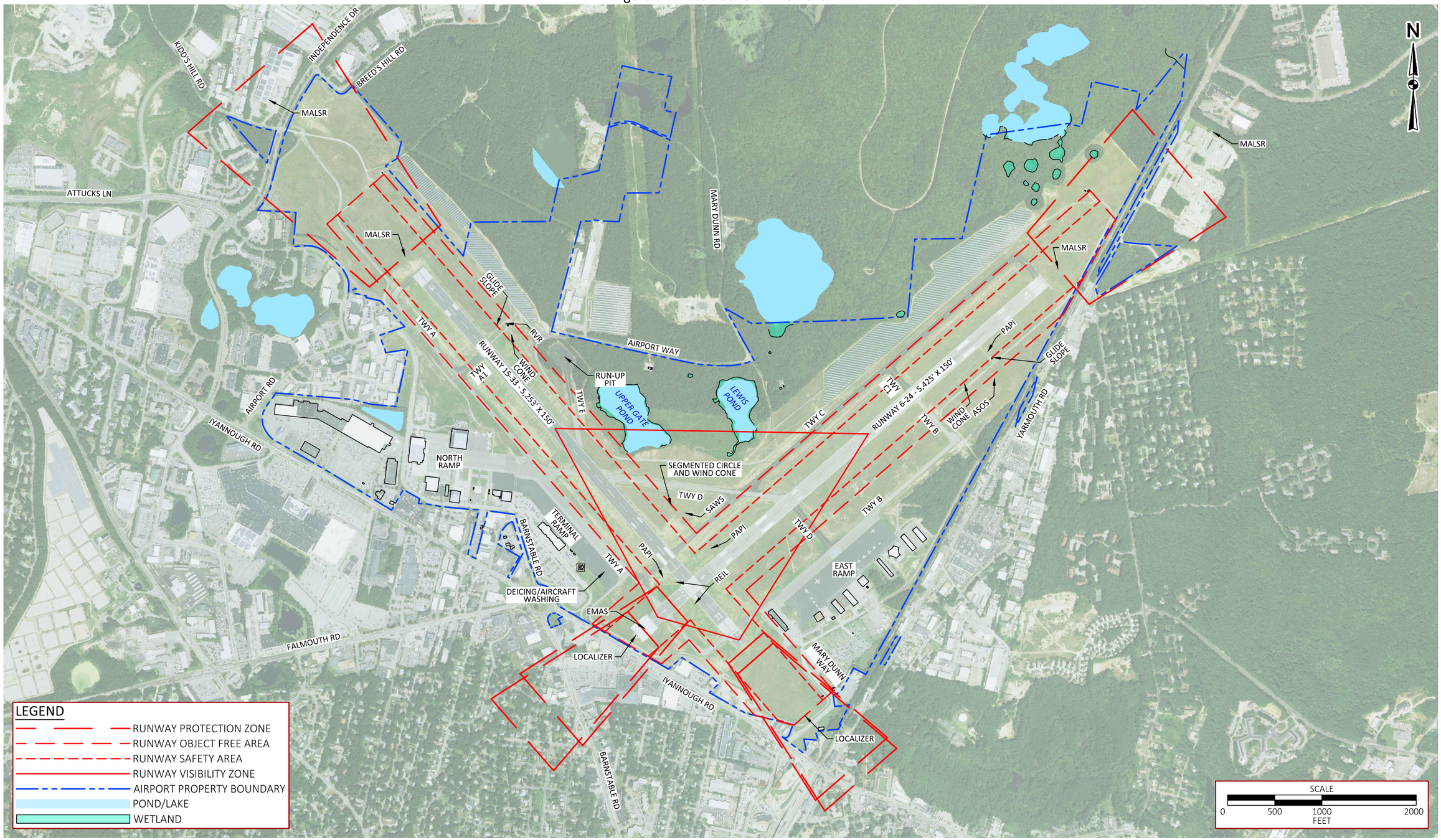
- **Meets FAA Standards:** Since the existing Airport meets FAA standards using RSA determinations and Modifications to Standards (MOS), this alternative meets FAA design standards.

- **Meets Facility Requirements:** The No Build Alternative does not meet the existing and future facility requirements related to runway length.

PLANNING CONSIDERATION
The Airport will not be able to meet the needs of the year-round community that relies on aviation - business and residents – using the No Build alternative.

- **Is Constructable**: Since there is no construction proposed, constructability does not apply.

Figure 6-2: Alternative 1 – No Build



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Runway 15-33 Alternative 2 – Meets All Facility Requirements

This alternative is a maximum build out scenario. It proposes constructing a Runway 15-33 extension that meets the runway length identified in Chapter 5. This alternative includes a 1,295-foot extension to the Runway 15 end and a 400-foot extension to the Runway 33 end. The Runway 33 extension would be a displaced threshold; the Runway 33 landing threshold would remain in its current location. In this alternative, Taxiway A would extend to the new runway ends and connect to the runway at a 90-degree angle. All areas within the taxiway object free areas (TOFAs) and relocated perimeter road located off Airport property would be acquired when the land becomes available on a willing seller basis. Alternative 2 would meet the requirement of 6,000 feet of both accelerated stop distance available (ASDA) and landing distance available (LDA) in both directions of Runway 15 and 33. Relocating the Runway 15 landing threshold would require obstruction removal and creates an incompatible land use by having Victory Chapel (a house of worship) within the runway protection zone (RPZ). This alternative is shown in **Figure 6-3**.

This Alternative was assessed against the three evaluation factors; the results are below:

- **Meets FAA Standards:** The runway extension moves the RPZs further out and over Victory Chapel. A house of worship within an RPZ is an incompatible land use. Therefore, this alternative does not meet FAA standards.

- **Meets Facility Requirements:** The runway length meets the facility requirements identified in Chapter 5. Therefore, this alternative meets facility requirements.

- **Is Constructable**: The obstructions that would need to be removed or lowered for this alternative make constructability challenging and costly. The obstructions include above ground utilities (mounted on poles) that would require re-location along Independence Drive as well as other man-made structures and natural obstructions.

Runway 15-33 Alternative 3 – Reduced Obstructions, Enhanced Land Use Compatibility

This alternative is similar to the alternative presented in the 2008 Master Plan. This alternative proposes a 1,258-foot extension to the Runway 15 end and a 400-foot extension to the Runway 33 end. This alternative includes a 1,058-foot displaced landing threshold on the Runway 15 end and a 550-foot displaced threshold on the Runway 33 end. In this alternative, Taxiway A would extend to the new runway ends and connect to the runway at a 90-degree angle. All areas within the TOFAs and relocated perimeter road located off Airport property would be acquired when the land becomes available on a willing seller basis. Runway 15-33 Alternative 3 would result in reduced obstruction impacts and enhanced land use compatibility compared to Runway 15-33 Alternative 2. While it does not meet the Runway 15 recommended LDA of 6,000 feet, it improves the Runway 15 LDA by 200 feet compared to existing conditions. This alternative is shown in **Figure 6-4**. This Alternative was assessed against the three evaluation factors; the results are below:

- **Meets FAA Standards:** This alternative, like the No Build, meets FAA standards.

- **Meets Facility Requirements:** This alternative meets the Runway 33 runway length need and improves the Runway 15 landing distance by 200 feet.

- Is Constructable: This alternative has minimal man-made obstructions and a reduced number of natural obstructions compared to Runway 15-33 Alternative 2 and is constructible.

Runway 15-33 Alternative 4 – Meets Most Requirements, Enhanced Land Use Compatibility

This alternative proposes an 895-foot extension to the Runway 15 end and a 400-foot extension to the Runway 33 end. This alternative includes a 695-foot displaced threshold on the Runway 15 end and a 550-foot displaced threshold on the Runway 33 end. In this alternative, Taxiway A would be extended to the new runway ends and connect to the Runway 15 and 33 ends at 90-degree angles. All areas within the TOFAs and relocated perimeter road located off Airport property would be acquired when the land becomes available on a willing seller basis. Runway 15-33 Alternative 4 would result in reduced obstruction impacts and enhanced land use compatibility compared to Runway 15-33 Alternative 2. While it does not meet the Runway 15 recommended LDA of 6,000 feet, it improves the Runway 15 LDA by 200 feet compared to existing conditions.

Runway 15-33 Alternative 4 distinguishes itself from Runway 15-33 Alternative 3 by reviewing the balance of Airport expansion and at what point runway length has diminishing returns in terms of operations. The additional runway length that is proposed in Runway 15-33 Alternative 3 only aids for take-off purposes and does not help bring the Airport closer to meeting the facility requirements for landing needs. Runway 15-33 Alternative 4 removes this excess pavement and focuses on the key pavement necessary to meet the facility requirements, where possible. This alternative is shown in Figure 6-5.

This Alternative was assessed against the three evaluation factors; the results are below:

- Meets FAA Standards: This alternative, like the No Build, meets FAA standards.
- Meets Facility Requirements: This alternative meets the Runway 33 runway length need and improves the Runway 15 landing distance by 200 feet.
- Is Constructable: This alternative has minimal man-made obstructions and a reduced number of natural obstructions compared to Runway 15-33 Alternative 2 and is constructible.

Level 2 Screening Runway 15-33 Alternatives Comparison

Table 6-4 compares the declared distances for all four Runway 15-33 alternatives and Table 6-5 compares the four Runway 15-33 alternatives based on the Level 2 screening evaluation criteria. Runway 15-33 Alternative 4 - Meets Most Requirements, Enhanced Land Use Compatibility is the only alternative moving forward to Level 3 Screening. This alternative balances the need to meet FAA design standards and Airport facility requirements, while minimizing obstruction removal and being constructible with few challenges.

Figure 6-3: Runway 15-33 Alternative 2 – Meets All Facility Requirements

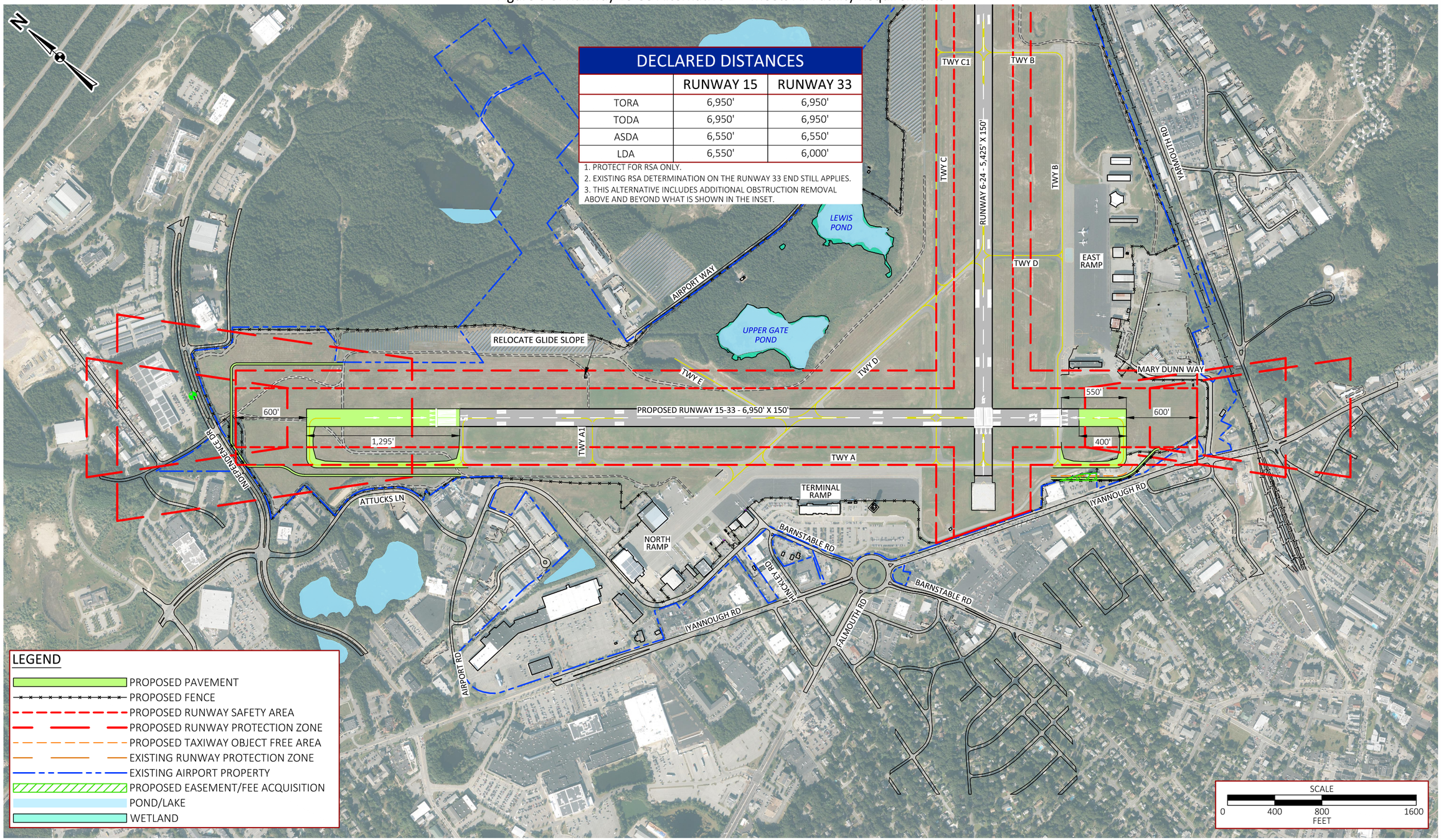

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Figure 6-4: Runway 15-33 Alternative 3 - Reduced Obstructions, Enhanced Land Use Compatibility

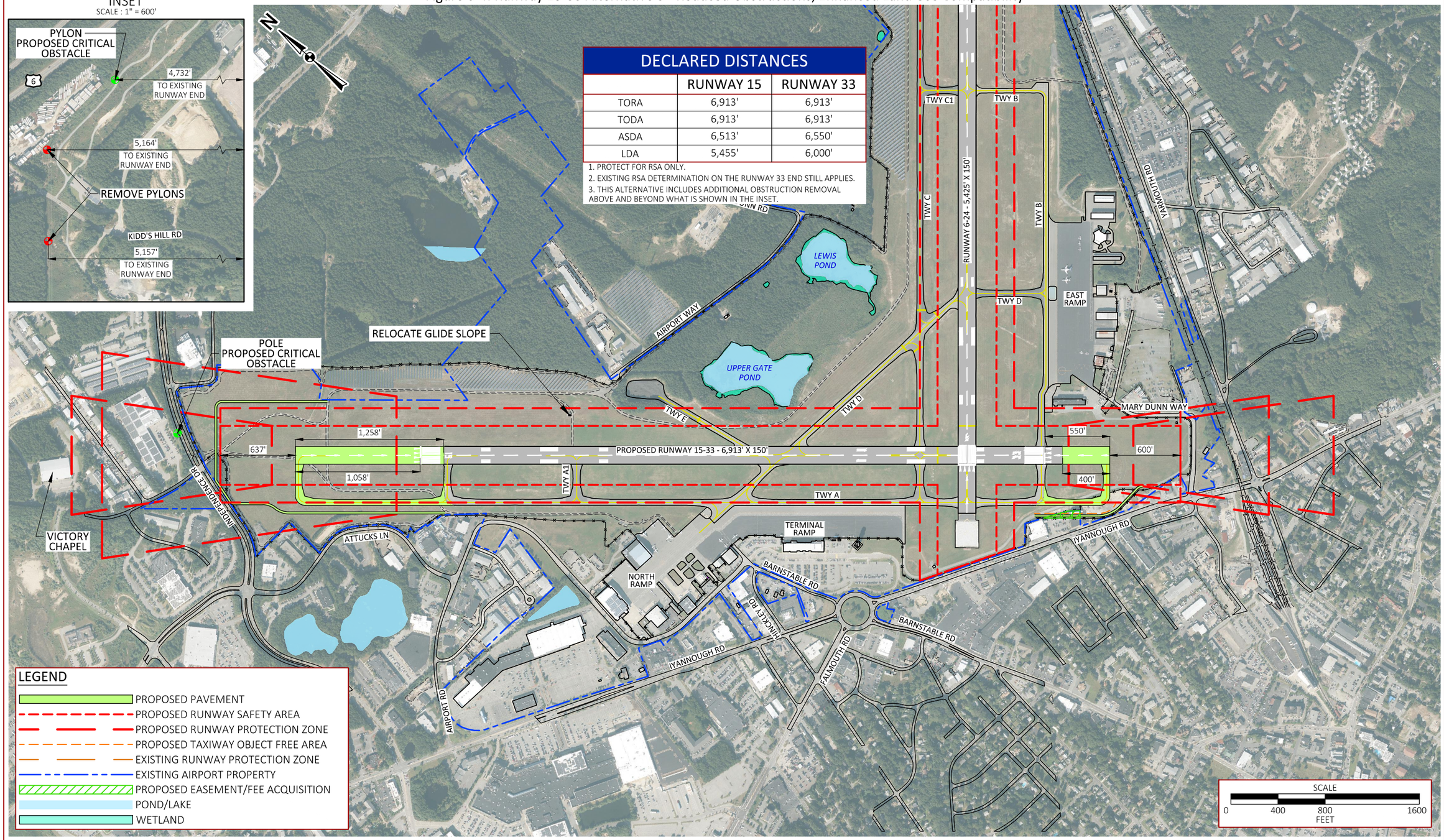

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Figure 6-5: Runway 15-33 Alternative 4 - Meets Most Requirements, Enhanced Land Use Compatibility

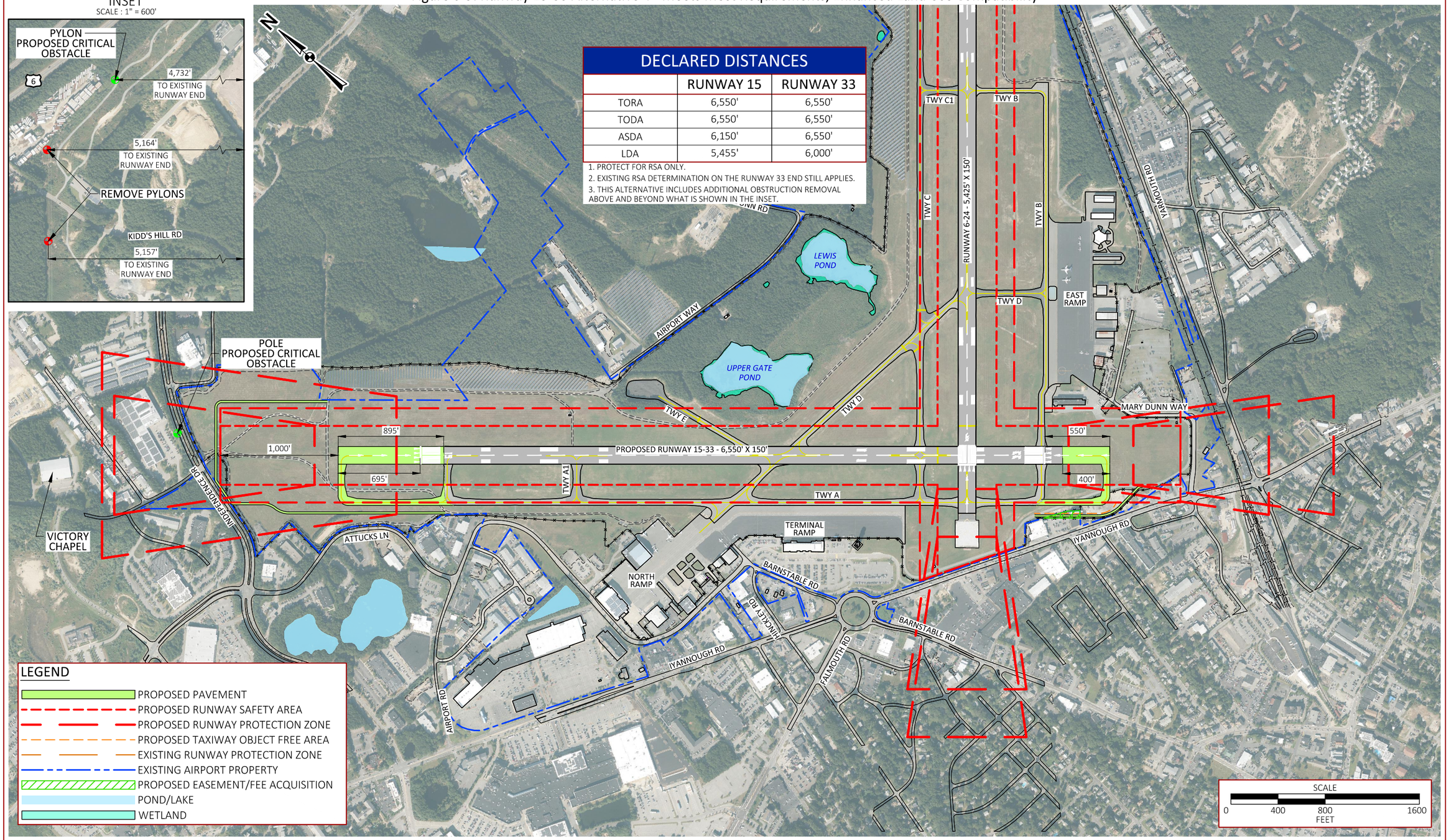

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Table 6-4: Declared Distances Comparison

	Runway 15			
Declared Distances (feet)	No Build	Meets Facility Requirements	Reduced Obstructions, Enhanced Land Use Compatibility	Meets Most Requirements, Enhanced Land Use Compatibility
TORA	5,253	**6,950**	**6,913**	**6,550**
TODA	5,253	**6,950**	**6,913**	**6,550**
ASDA	5,253	**6,550**	**6,513**	**6,150**
LDA	5,253	**6,550**	5,455	5,455
	Runway 33			
Declared Distances (feet)	No Build	Meets Facility Requirements	Reduced Obstructions, Enhanced Land Use Compatibility	Meets Most Requirements, Enhanced Land Use Compatibility
TORA	5,253	**6,950**	**6,913**	**6,550**
TODA	5,253	**6,950**	**6,913**	**6,550**
ASDA	5,253	**6,550**	**6,550**	**6,550**
LDA	5,103	**6,000**	**6,000**	**6,000**

Bold meets facility requirements of at least 6,000 feet landing/takeoff distance or at least 6,400 feet rejected takeoff.

Sources: FAA Airport/Facility Directory, 25 Feb. 2021 – 22 Apr. 2021; McFarland Johnson, 2021.

Table 6-5: Level 2 Screening Runway 15-33 Alternatives Comparison

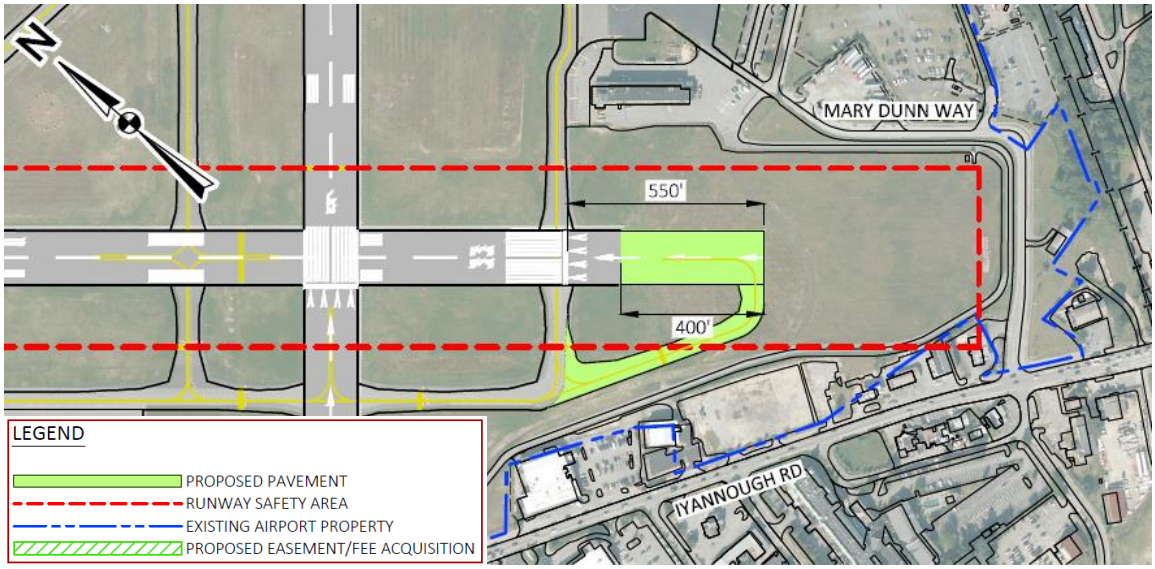
Alternative	Meets FAA Standards	Meets Facility Requirements	Is Constructable	Passes Level 2
No Build	Yes	No	N/A	No: Does not attempt to meet facility requirements
Meets Facility Requirements	On-Airport: Yes Off-Airport: No, incompatible land use	Yes	Yes: Multiple obstructions	No: Does not meet FAA standards; constructability challenges
Reduced Obstructions, Enhanced Land Use Compatibility	Yes	Yes: Runway 33; Improves: Runway 15 LDA by 200 feet	Yes: Minimal obstructions; excess runway length	No: No need for excess runway pavement
Meets Most Requirements, Enhanced Land Use Compatibility	Yes	Yes: Runway 33; Improves: Runway 15 LDA by 200 feet	Yes: Minimal obstructions	**Yes:** Balances standards, needs, and minimizing impacts

Source: McFarland Johnson analysis, 2021.

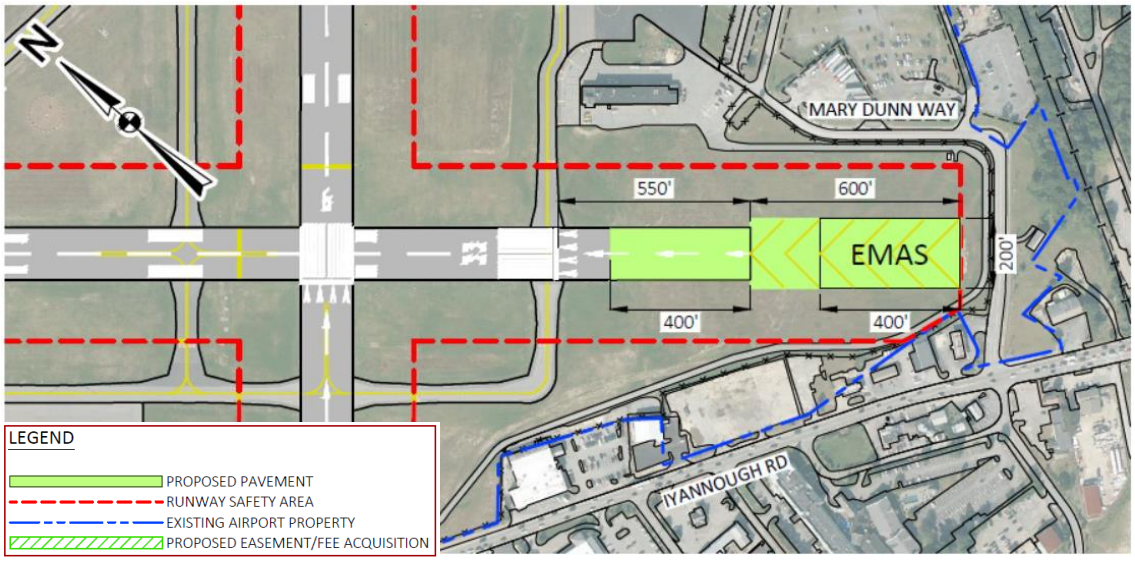
Runway 15-33 Alternatives Enhancements

The following alternative enhancements for Runway 15-33 were considered as part of the Master Plan process as defined below:

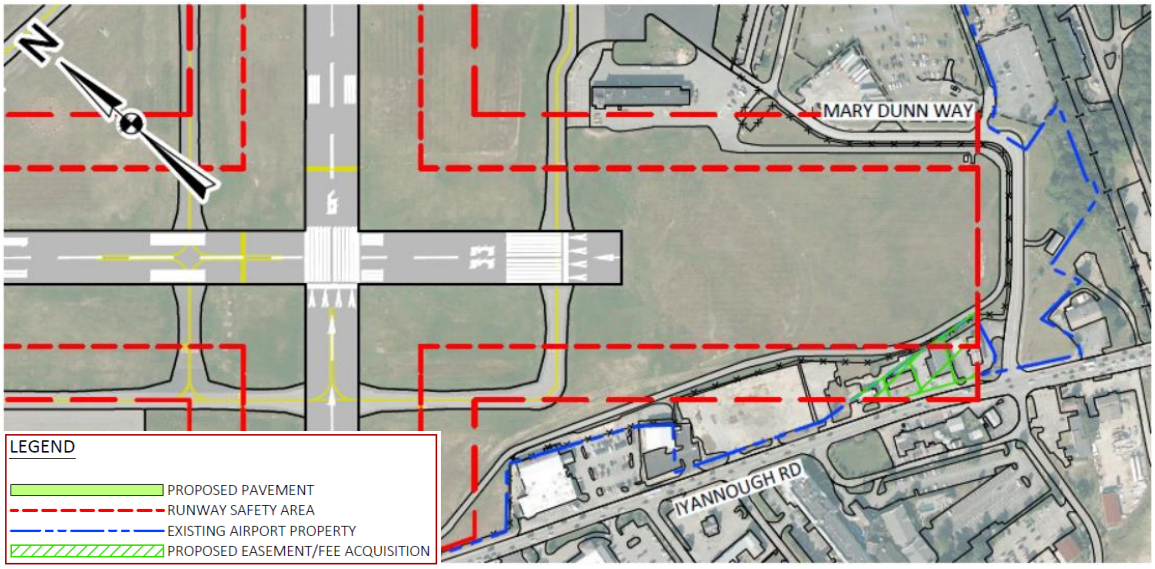
- **Runway 33 Optimized Access Taxiway:** This enhancement proposes an angled access taxiway to the proposed Runway 33 end. This enhancement improves visibility of the approach areas and does not require property acquisition. However, it does not meet full FAA geometry standards. Opportunities such as additional signage, markings, and lighting could be considered to mitigate the non-standard angle. This alternative enhancement could be considered to provide a full-length parallel taxiway and prevent back-taxiing on Runway 33 for Runway 33 departures. Since the standard access taxiway requires land acquisition that has not become available since the 2008 ALP, this may be a feasible solution until the needed properties are acquired by the Airport for the standard access taxiways. In an effort to fully meet FAA geometry standards, this enhancement does not move forward to Level 3 screening, but may be reviewed in the subsequent NEPA process as a lower impact, interim option until the land needed for a standard taxiway becomes available.



- **Runway 33 EMAS:** This enhancement would add an EMAS beyond the proposed Runway 33 extension. This enhancement increases the Runway 15 ASDA and LDA by 400 feet. However, constructing and maintaining an EMAS is costly. To meet facility needs, this enhancement will be carried forward to Level 3 screening.



- **Runway Safety Area /Runway Object Free Area Incremental Improvements:** The current RSA and ROFA conditions are standard based on the existing RSA determination and MOS. To continue to provide incremental improvements at the Airport, this enhancement shows acquiring all properties within RSAs and ROFAs, except for public roads and railroads, on a willing seller basis. Easement/land acquisition required to meet full dimension FAA design standards for Runway 33 would be approximately 0.2 acres for the RSA and approximately 1.3 acres for the ROFA. Based on FAA guidance this enhancement will be carried forward to Level 3 screening.



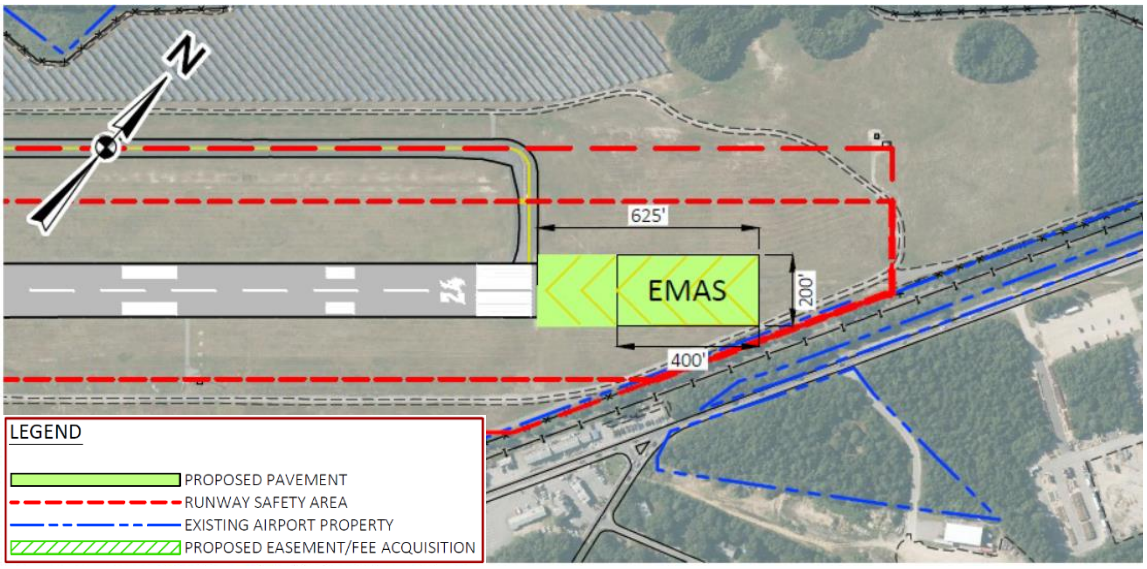
- **Runway Protection Zone Incremental Improvements (not shown):** The current RPZ conditions are grandfathered into the standards; therefore, the current conditions are considered standard. To continue to identify incremental improvements, this enhancement shows increasing Airport control of the land area within the RPZs on a willing seller basis. Approximately 52 acres within the Runway 15 and 33 RPZs are off Airport property. Based on FAA standards this enhancement will be carried forward to Level 3 screening.

Runway 6-24 Alternative Enhancements

The following alternative enhancements for Runway 6-24 were considered as part of the Master Plan process as defined below:

- **Runway 24 EMAS:** This enhancement would add an EMAS beyond the existing Runway 6 departure end (near the Runway 24 threshold). As shown in the Level 1 screening, it is not feasible to provide full dimension RSA for Runway 6-24. An EMAS provides an equivalent level of safety to a full dimension RSA.

PLANNING CONSIDERATION
An EMAS will be shown for Runway 24 as an option to bring the RSAs into full compliance with FAA standards, should the Airport need to meet standards above and beyond the existing RSA determination (such as with enhanced commercial service operations).



PLANNING CONSIDERATION
Any adjustments to declared distances or landing thresholds will be further evaluated in conjunction with the EMAS installation.

- **Runway Safety Area Determination (not shown):** The existing RSA determination (approved by the FAA on September 13, 2000) deemed Runway 6-24 to be safe. The RSA determination remains in effect until such a time that changes to the operations, FAA standards, or local conditions change from those at the time the RSA determination was signed. Runway 6-24 is being used

today in a similar manner as in 2000. Future projects will attempt to eliminate, where possible, the need for the existing RSA determination.

- **Runway Protection Zone Incremental Improvements (not shown):** The current RPZ conditions are grandfathered into the standards; therefore, the current conditions are considered standard. To continue to identify incremental improvements at the Airport, this enhancement shows increasing Airport control of the land area in the RPZs on a willing seller basis. Approximately 43 acres within the Runway 6 and 24 RPZs are off Airport property. Based on FAA standards this enhancement will be carried forward to Level 3 screening.

A summary of alternatives enhancements is shown in **Table 6-6**.

Table 6-6: Alternative Enhancements Summary

Alternatives	Meets FAA Standards	Meets Facility Requirements	Is Constructable	Has Operational Impacts on Airport	Passes Level 2
Runway 33 Optimized Access Taxiway	No	Yes	Yes	No	No
Runway 33 EMAS	Yes	Yes	Yes	N/A	**Yes**
Runway 33 RSA/ROFA Incremental Improvements	Yes	Yes	N/A	N/A	**Yes**
Runway 15-33 RPZ Incremental Improvements	Yes	Yes	N/A	N/A	**Yes**
Runway 24 EMAS	Yes	Yes	Yes	N/A	**Yes**
Runway 24 RSA Determination	Yes: Current condition is deemed safe	Yes	N/A	N/A	**Yes**
Runway 6-24 RPZ Incremental Improvements	Yes	Yes	N/A	N/A	**Yes**

Source: McFarland Johnson analysis, 2021.

Runway 15-33 Taxiway Alternative 2

The existing Taxiway D has multiple non-standards geometry conditions. Two build alternatives were created to resolve these. Runway 15-33 Taxiway Alternative 2 (shown in **Figure 6-6**) proposes the following projects:

- Construct a partial parallel taxiway with a 400-foot standard separation east of Runway 15-33 from Taxiway B to existing Taxiway A1. This construction includes the removal of Taxiway D between Taxiway A and this new parallel taxiway. This prevents any operational concerns of two-way taxiing occurring in front of the terminal building and eliminates direct access from the North Ramp, the y-shaped runway crossing, and the high-energy crossing on Runway 15-33. This project impacts the edge of Upper Gate Pond, which will be reviewed in more detail in the Level 3 screening.
- Construct a run-up area along the north side of the proposed partial parallel taxiway to replace the existing Taxiway E run-up pit that will be removed. The current run-up pit is at a lower elevation and surrounded by trees, which shield the neighboring communities from the run-up sound impact. It is recommended that blast fence/wall will be constructed next to the proposed run-up pit both for blast protection as well as noise protection. This run-up area should accommodate the existing fleet of aircraft using the run-up pit (including the Cessna 402 and Tecnam P2012). The run-up pit and associated object free area will remain clear of the access/maintenance road.
- Remove Taxiway E

This Alternative was assessed against the four evaluation factors; the results are below:

- **Meets FAA Standards:** This alternative meets FAA design standards by providing a standard 400-foot runway-taxiway centerline separation and meets FAA geometry standards by, eliminating the high-energy intersection, non-standard runway-taxiway intersection angles, the y-shaped runway crossing, and direct access.

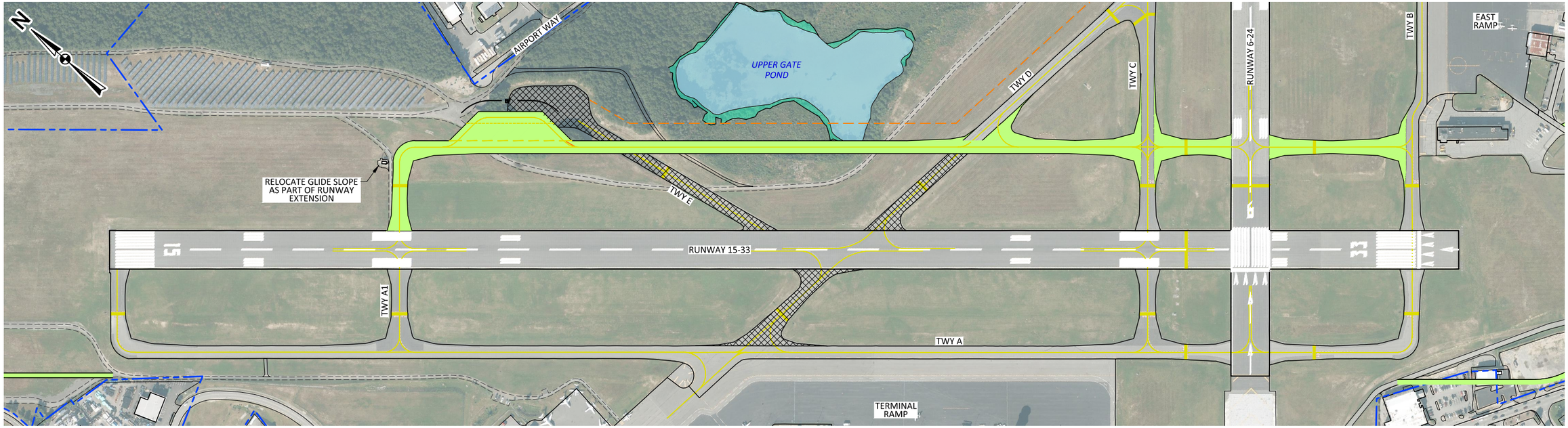
- **Meets Facility Requirements:** This alternative meets facility requirements.

- **Is Constructable**: This alternative is constructable.

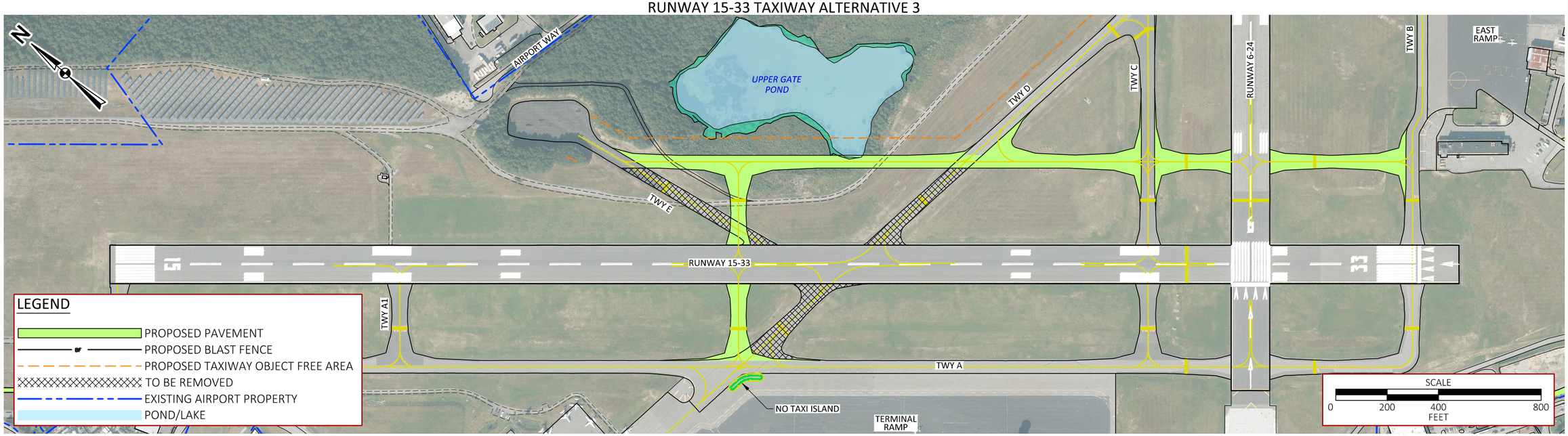
- **Has Operational Impacts on Airport**: This alternative prevents two-way taxi operations in front of the terminal, which therefore prevents head-to-head potential in front of the terminal. Aircraft may have longer taxi times to/from the terminal but may have shorter taxi times should the North Ramp be expanded within the planning period.

Figure 6-6: Runway 15-33 Taxiway Alternatives

RUNWAY 15-33 TAXIWAY ALTERNATIVE 2



RUNWAY 15-33 TAXIWAY ALTERNATIVE 3



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Runway 15-33 Taxiway Alternative 3

The intent of this alternative was to prevent two aircraft coming head-to-head on the taxiway in front of the terminal building. This could occur if the Runway 15-33 crossing was anywhere southeast of the midfield crossing to line up with Taxiway D coming out of the North Ramp. This alternative maintains the run-up pad in its existing location.

This alternative proposes the following projects (shown in Figure 6-6):

- Construct a partial parallel at 400-foot standard separation east of Runway 15-33 from Taxiway B crossing Runway 15-33 midfield (connecting to existing Taxiway D coming out of the North Ramp). This construction includes the removal of Taxiway D between Taxiway A and this new parallel taxiway. This prevents any operational concerns of two-way taxiing occurring in front of the terminal building and eliminates direct access from the North Ramp, and the y-shaped runway crossing but still has a high-energy crossing on Runway 15-33. This project impacts Upper Gate Pond.
- Remove the portion of Taxiway E from the proposed partial parallel taxiway to Runway 15-33

This alternative was assessed against the four evaluation factors; the results are below:

- Meets FAA Standards: This alternative improves conditions to the No Build by providing a standard 400-foot runway-taxiway centerline separation and improves the following non-standard FAA geometry conditions: eliminates non-standard runway-taxiway intersection angles, the y-shaped runway crossing, and direct access. It does not fully meet FAA geometry standards due to the high-energy crossing.

- Meets Facility Requirements: This alternative meets facility requirements.

- Is Constructable: This alternative is constructable.

- Has Operational Impacts on Airport: This layout maintains operational flexibility for two-runway configuration and providing alternate taxi routes to prevent head-to-head conditions.

Level 2 Runway 15-33 Taxiway Alternatives Comparison

Table 6-7 compares the Runway 15-33 Taxiway alternatives based on the Level 2 screening evaluation criteria.

As shown in Table 6-7, Runway 15-33 Taxiway Alternative 2 moves forward to Level 3 Screening since it is the only alternative that meets FAA design and geometry standards.

Table 6-7: Level 2 Screening Runway 15-33 Taxiway Alternatives Comparison

Alternative	Meets FAA Standards	Meets Facility Requirements	Is Constructable	Has Operational Impacts	Passes Level 2
No Build	No	No	N/A	None	No
Runway 15-33 Taxiway Alternative 2	Yes	Yes	Yes	None	**Yes**
Runway 15-33 Taxiway Alternative 3	No: High-energy crossing	Yes	Yes	Yes	No: Does not meet FAA standards and has operational impacts

Source: McFarland Johnson analysis, 2021.

Runway 6-24 Taxiway Alternative 2

The existing Runway 6-24 has multiple non-standards geometry conditions. One build alternative was created to resolve these. This alternative would include the following projects (shown in **Figure 6-7**):

- Move Taxiway B to a standard 400-foot separation from Runway 6-24. This reduces taxi time and opens up additional land for aeronautical development potential.
- Construct a perpendicular crossover taxiway south of the existing glide slope so that the new taxiway's TOFA remains clear of the glide slope. It is located approximately 3,480 feet from the Runway 6 threshold.
- Remove Taxiway C1 and the keep the portion of existing Taxiway B connecting to Runway 6-24.
- Construct a midfield taxiway to Taxiway B.
- Keep Taxiway D exit to Taxiway C as an acute-angled exit only taxiway.
- Construct a standard separation taxiway north of Runway 15-33.

Table 6-8 shows the cumulative percentages of aircraft that can exit at each of the proposed taxiways. It shows that all small and most twin-engine aircraft (weighing 12,500 pounds or less) can exit prior to or at the new taxiway near the glide slope after landing on Runway 6. Heavy/large aircraft would have the full-length available and could use Taxiway C to taxi back to the terminal or North Ramp. All single and twin-engine aircraft landing on Runway 24 would be able to exit prior to the Runway 15-33 intersection. Large/heavy aircraft or commercial aircraft would have some opportunity to exit prior to the Runway 15-33 intersection. This alternative would limit runway crossings, especially those in the high-energy portion of the runway, and maintain or improve existing aircraft flow.

Figure 6-7: Runway 6-24 Taxiway Alternative 2

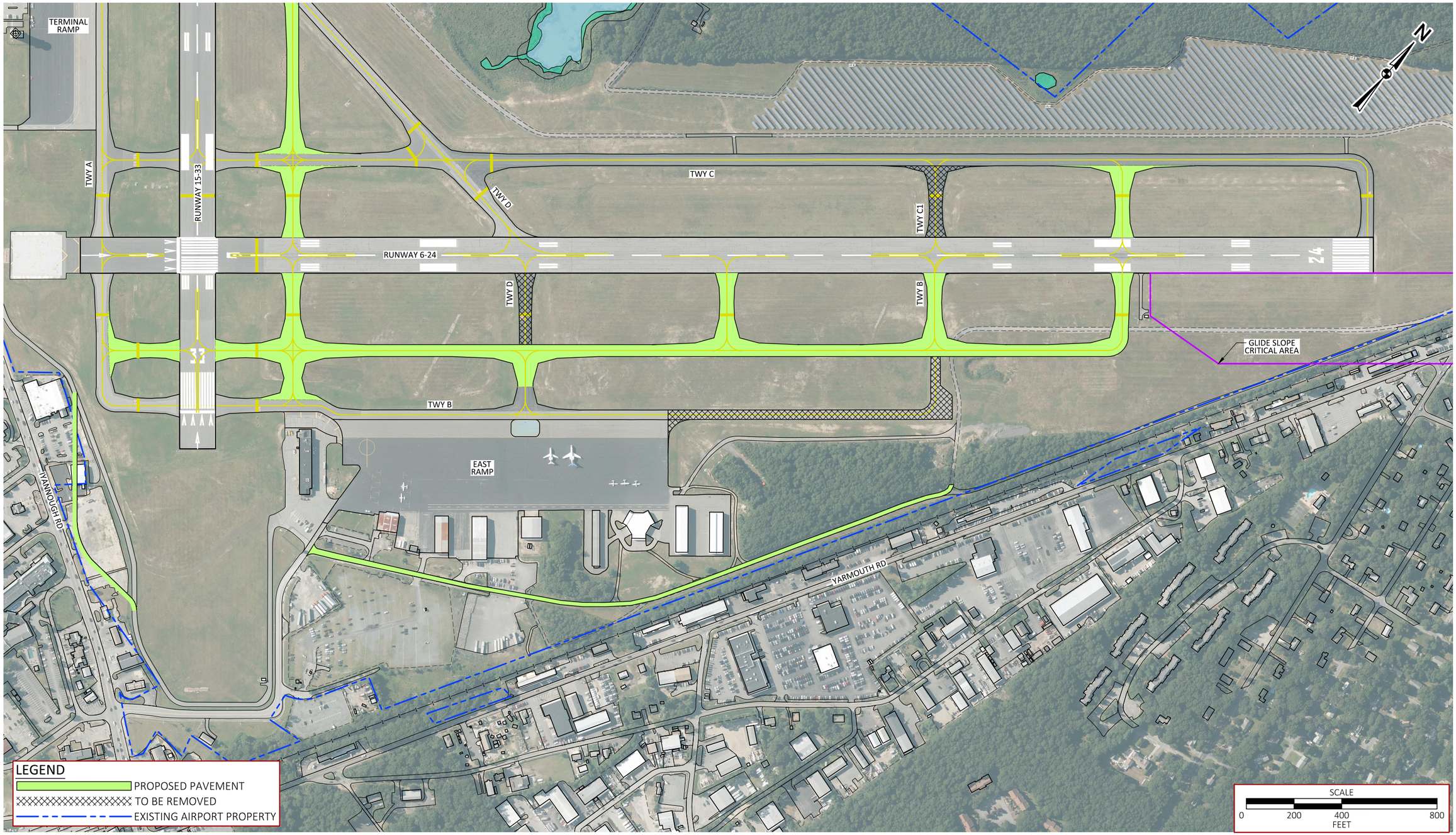

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Table 6-8: Runway 6-24 Taxiway Alternative 2 Exit Taxiway Percentages

	Runway 6 Landing		Runway 24 Landing	
	Dry	Wet*	Dry	Wet*
New Taxiway Near Glide Slope	Single: All Twin: 81%	Single: 99% Twin: 41%	None	None
Taxiway B (East only)	Single: All Twin: 55%	Single: 97% Twin: 22%	Single: 67% Twin: None	Single: 40% Twin: None
Midfield Taxiway (East only)	Single: 93% Twin: 7%	Single: 75% Twin: None	Single: 99% Twin: 24%	Single: 89% Twin: 4%
Taxiway D Acute-Angled	N/A	N/A	Single: All Twin: 74% Heavy: 7%	Single: 98% Twin: 35% Heavy: None
New Parallel North of Runway 15-33	None	None	Single/Twin: All Heavy: 24%	Single/Twin: All Heavy: 4%

* This only includes wet runways and does not include snow, ice, or other runway contamination.
Sources: FAA AC 150/5300-13A and McFarland Johnson analysis, 2021.

This alternative was assessed against the four evaluation factors; the results are below:

- **Meets FAA Standards:** This alternative meets FAA design standards by providing a standard 400-foot runway-taxiway centerline separation, eliminating high energy intersections, and addressing direct access and non-standard runway-taxiway intersection angles.
- **Meets Facility Requirements:** This alternative meets facility requirements by minimizing taxi distance and opening up space available for aviation development currently not available due to the larger than standard Runway 6-24 to Taxiway B separation.
- **Is Constructable**: This alternative is constructible and attempts to use existing pavement whenever possible.
- **Has Operational Impacts on Airport**: Taxiways were reviewed to make sure taxiways allow efficient Runway 6-24 exit opportunities. No operational impacts on the Airport have been identified.

Level 2 Runway 6-24 Taxiway Alternatives Comparison

Table 6-9 compares the Runway 6-24 Taxiway alternatives based on the Level 2 screening evaluation criteria.

As shown in **Table 6-9**, Runway 6-24 Taxiway Alternative 2 moves forward to Level 3 screening since it is the only alternative that meet FAA design and geometry standards.

Table 6-9: Level 2 Screening Runway 6-24 Taxiway Alternatives Comparison

Alternative	Meets FAA Standards	Meets Facility Requirements	Is Constructable	Has Operational Impacts	Passes Level 2
No Build	No	No	N/A	None	No: Does not meet FAA Standards
Runway 6-24 Taxiway Alternative 2	Yes	Yes	Yes	None	**Yes**

Source: McFarland Johnson analysis, 2021.

Level 2 Screening Alternatives Moving Forward

The alternatives identified as being carried forward to Level 3 are:

- Runway 15-33 Meets Most Requirements, Enhanced Land Use Compatibility
- Runway 33 EMAS
- Runway 15-33 RSA/ROFA Incremental Improvements
- Runway 15-33 RPZ Incremental Improvements
- Runway 24 EMAS
- Runway 6-24 RSA Determination
- Runway 6-24 RPZ Incremental Improvements
- Runway 15-33 Taxiway Alternative 2
- Runway 6-24 Taxiway Alternative 2

The above alternatives are combined into two alternatives. Both alternatives include projects that provide incremental improvements to FAA design and geometry standards. Since the Runway 33 EMAS provides operational improvements, it is the only variable factor. The following two combined alternatives have been carried forward to Level 3 screening:

- Most Requirements, Enhanced Land Use Compatibility with Runway 33 EMAS (see **Figure 6-8**)
- Most Requirements, Enhanced Land Use Compatibility without Runway 33 EMAS (see **Figure 6-9**)

Figure 6-8: Most Requirements, Enhanced Land Use Compatibility With Runway 33 EMAS

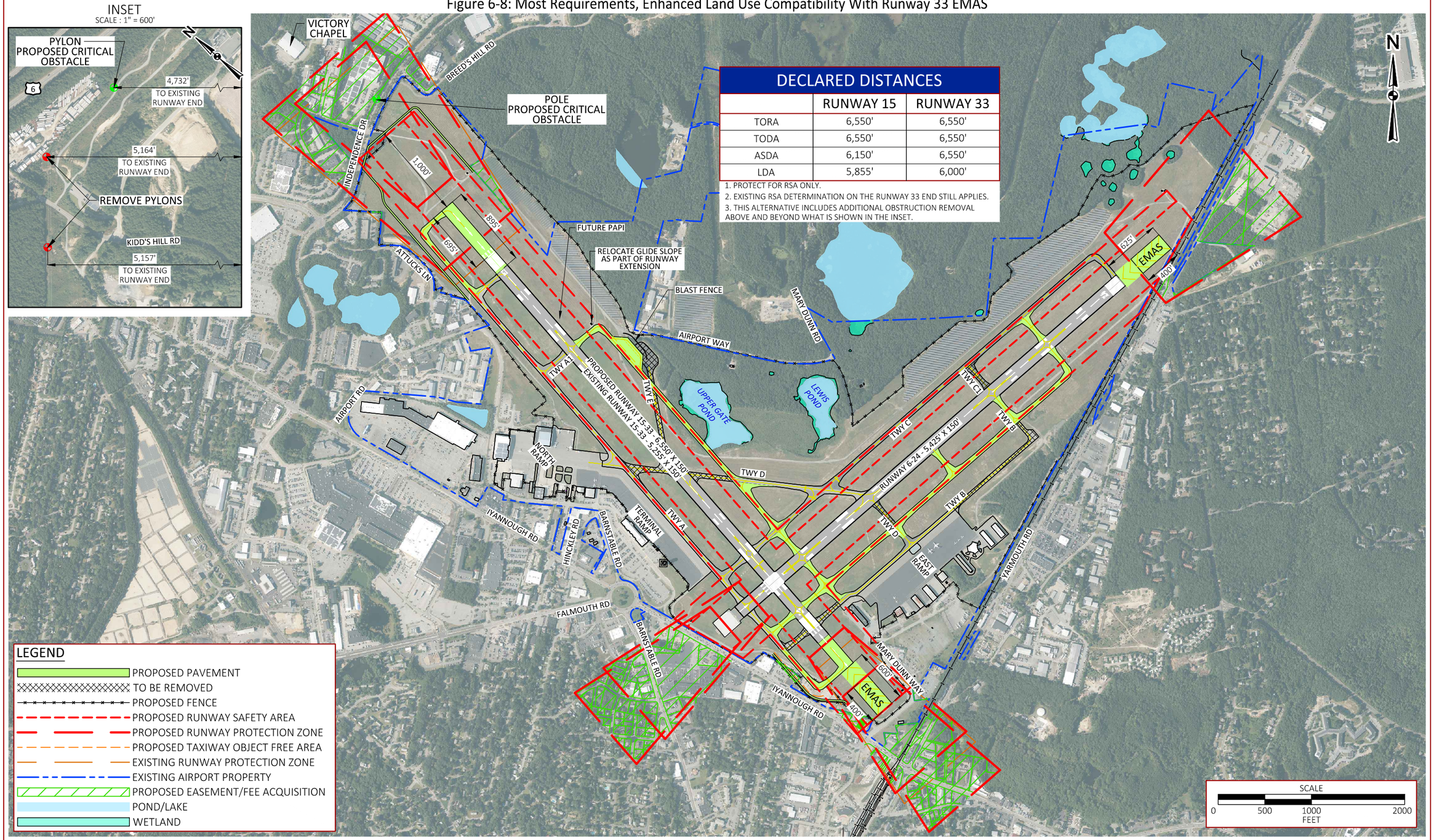

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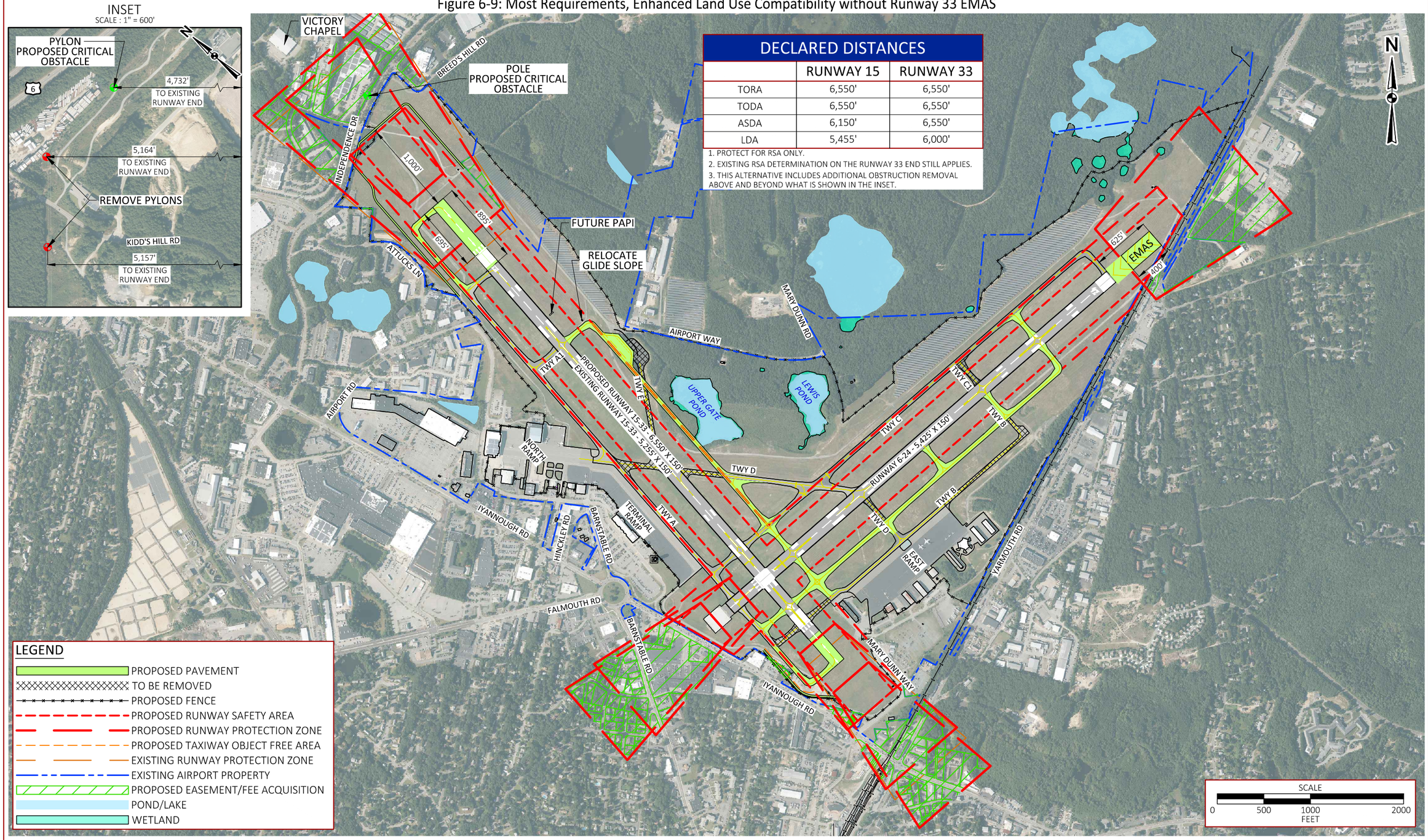
Figure 6-9: Most Requirements, Enhanced Land Use Compatibility without Runway 33 EMAS



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6.2.3. Level 3 Screening: Environmental Impacts

This screening level looks at the remaining alternatives to assess potential impacts to the surrounding environment including wetlands, ponds, vernal pools, priority habitats of rare species, estimated locations of other habitats of rare wildlife, and farmland soils of statewide importance. A summary of the impacts is shown in Table 6-10.

Table 6-10: Level 3 Screening Summary

Alternative	Has Higher Environmental Impacts Over Other Alternatives	Increases New Impervious Surfaces >5 Percent of Airport Property	Passes Level 3
Most Requirements, Enhanced Land Use Compatibility with Runway 33 EMAS	No	No	Yes
Most Requirements, Enhanced Land Use Compatibility without Runway 33 EMAS	No	No	Yes

Source: McFarland Johnson, 2021.

Both remaining alternatives were deemed to have similar environmental impacts including no vernal pool or habitat of rare species/wildlife impacts. The environmental constraints on and around the Airport can be seen in Chapter 3, *Environmental Overview*, Figure 3-17.

Both alternatives have the same environmental impacts, as follows:

- 4.7 acres of farmland soils of statewide importance on Airport property surrounding the Runway 15 end
- 4.3 acres of wetland buffer and pond buffer impact including the 200-foot wetland buffer put in place by the Cape Cod Commission around Upper Gate Pond due to the new northeast parallel taxiway to Runway 15-33
- 0.2 acres of pond impact to Upper Gate Pond due to the new northeast parallel taxiway to Runway 15-33

The difference between the two alternatives is the new impervious pavement:

- The alternative with the Runway 33 EMAS proposes the construction of approximately 27 acres of new impervious pavement. This additional pavement is equivalent to paving an additional approximately 4.2 percent of the Airport property. The Airport is currently approximately 15.4 percent paved.
- The alternative without the Runway 33 EMAS proposes the construction of approximately 25 acres of new impervious pavement. This is equivalent to paving an additional approximately 3.9 percent of the Airport property. The Airport is currently approximately 15.4 percent paved.

Following the Master Plan, projects will be reviewed in detail through the Cape Cod Commission, MEPA, and NEPA processes.

Level 3 Screening Alternatives Moving Forward

The only difference is the amount of new impervious pavement on the airfield. Since the difference between the two alternatives is minor (additional 0.3 percent of Airport property being paved), both alternatives have similar environmental impacts and therefore are carried forward to the Level 4 screening.

6.2.4. Level 4 Screening: Broader Community Impacts

Broader community impacts reviewed as part of this screening level include balanced impacts to the neighborhoods around the Airport (rather than one neighborhood being disproportionately affected) and travel flexibility for Cape Cod residents. An alternative summary is provided in **Table 6-11**.

Table 6-11: Level 4 Screening Summary

Alternative	Balances Operational Impacts	Creates Travel Flexibility and Convenience	Passes Level 4
Most Requirements, Enhanced Land Use Compatibility with Runway 33 EMAS	Yes	Yes	**Yes**
Most Requirements, Enhanced Land Use Compatibility without Runway 33 EMAS	Yes	Yes	**Yes**

Source: McFarland Johnson, 2021.

Both alternatives create increased travel flexibility and convenience for Cape Cod residents. Both alternatives aim to create a balanced approach to operational impacts. Both alternatives differ from the 2008 Master Plan by balancing impacts, while the 2008 Master Plan alternative could result in undue burdens on specific neighborhoods. There is no change to the Runway 33 landing location from existing conditions for either alternative. It is the goal of the Airport to make sure that no neighborhood is disproportionately affected compared to any another by aircraft operations.

Since both alternatives have the same runway ends, both have the same common broader community impacts.

Level 4 Screening Alternatives Moving Forward

Both alternatives have the same broader community impacts and therefore are carried forward to the Level 5 screening.

6.2.5. Level 5 Screening: Cost

Both remaining alternatives were reviewed for construction costs and operational costs. The sole difference between the remaining alternatives is the construction of the Runway 33 EMAS. The cost of constructing an EMAS is high (approximately $7-8 million) and there are operational/maintenance costs associated with EMAS. Operational costs include inspections by both staff and manufacturers (approximately $66,000-$80,000 every three years). Maintenance

costs include the cost of replacing the EMAS components (bricks) every 10 years (approximately $5-6 million). **Table 6-12** compares the cost evaluation criteria of both alternatives.

Table 6-12: Level 5 Screening Summary

Alternative	Relative Construction Cost	Operational Cost	Passes Level 5
Most Requirements, Enhanced Land Use Compatibility with Runway 33 EMAS	High	Medium	No
Most Requirements, Enhanced Land Use Compatibility without Runway 33 EMAS	Medium	Low	**Yes**

Source: McFarland Johnson analysis, 2021.

Level 5 Screening Alternative Moving Forward

The alternative moving forward as the Preliminary Airside Recommendation for the ALP is Most Requirements, Enhanced Land Use Compatibility without Runway 33 EMAS due to the lower construction and operational costs. Since most operations currently operate in the summer peak season, aircraft can operate with limited weight and route penalties without the additional 400 feet of additional accelerate stop distance available and landing distance available that an EMAS on the Runway 33 end would provide for Runway 15 operations. Space is available to construct an EMAS near the Runway 33 threshold should conditions change.

6.2.6. Preliminary Airside Recommendation for the ALP

The result of the five screening levels identifies the alternative, Most Requirements, Enhanced Land Use Compatibility Without Runway 33 EMAS, as the Preliminary Airside Recommendation for the ALP. The preference of this alternative does not preclude an EMAS from being constructed in the future should one be deemed necessary to improve safety standards. The Preliminary Airside Recommendation for the ALP is shown in **Figure 6-10**. This alternative includes the following projects:

- Extend Runway 15-33 by 895 feet (including 695-foot displaced threshold) on the Runway 15 end and 400 feet of displaced threshold on the Runway 33 end. This includes the relocation of navigational and visual aids near the Runway 15 end.
- Extend Taxiway A to the proposed Runway 15-33 ends.
- Acquire the Runway 33 RSA and ROFA properties on a willing seller basis.
- Acquire the proposed Taxiway A TOFA properties on a willing seller basis.
- Enhance Airport control over RPZ properties for all runway ends in easement or fee on a willing seller basis.
- Construct a partial parallel taxiway at a standard 400-foot separation east of Runway 15-33 from Taxiway B to across from Taxiway A1.
- Construct a runup area along the north side of the proposed partial parallel taxiway.
- Remove Taxiway E and the existing runup pit.
- Remove the portion of Taxiway D between the proposed partial parallel taxiway and Taxiway A.
- Construct a 200-foot by 400-foot EMAS near the Runway 24 end/Runway 6 departure end. This project includes reviewing to see if any incremental improvements can be made to

the Runway 24 RSA prior to the landing threshold, such as moving the fence, trimming trees, etc.

- Move Taxiway B to a standard 400-foot separation south of Runway 6-24 and extend it north until it is located south of the existing glide slope and the TOFA remains clear of the glide slope.
- Remove Taxiway C1 between Runway 6-24 and Taxiway C.
- Construct a midfield taxiway from Taxiway B to Runway 6-24.
- Remove Taxiway D between Runway 6-24 and the proposed Taxiway B location.

The Preliminary Airside Recommendation for the ALP meets the most requirements with the least amount of impact. This alternative balances the need to meet FAA design standards and Airport facility requirements, while minimizing obstruction removal, environmental impacts and is considered to be constructible with few challenges.

6.3. TERMINAL ALTERNATIVES

6.3.1. Summary of Terminal Space Deficiencies

As described in detail under Chapter 5, *Facility Requirements,* Section 5.3, the terminal building has an overall deficiency of between 5,000 – 10,000 square feet (SF) to meet the projected 150 peak hour passenger requirements and 20,000 – 25,000 SF to meet the projected 200 peak hour passenger requirements. The primary areas needing additional space for proper function include:

- Secure holdroom
- Security screening checkpoint and queue area
- Outbound baggage screening and make up
- Baggage claim and inbound baggage handling

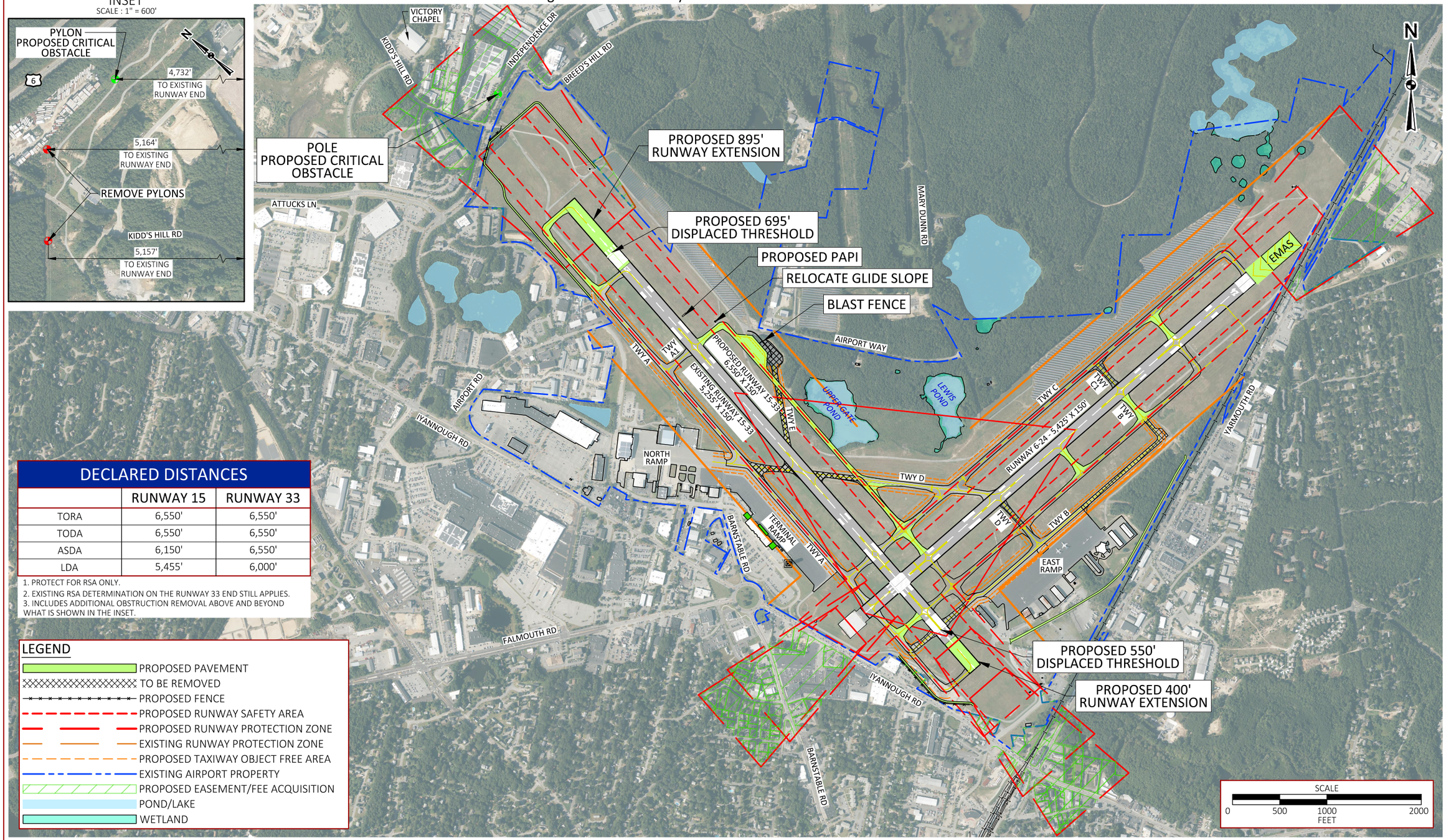
The relative age of the existing terminal building (less than 20 years) and the availability of some land to the north and south of the building (currently parking lots) suggests that a reconfiguration and expansion approach to accommodate additional space needs is preferable to an entirely new facility. **Figure 6-11** shows the existing terminal expansion opportunities.

The terminal functions uniquely in that it handles both secure and non-secure departures. This hybrid departures model is expected to continue forward for the foreseeable future. The secure and non-secure holdrooms are separated by a central outbound bag screening/make up area. This terminal layout results in efficient ramp operations and effective separation of screened and unscreened passengers as shown in **Figure 6-12**. Accordingly, any future reconfiguration and/or expansion is expected to maintain the general organizational layout of the terminal primary departure functions.

Certain functions with deficient space allocation (security checkpoint and baggage claim) are proximate to spaces which could benefit from relocation or repurposing for most efficient use of available space, creating an opportunity to address some of the space deficiencies within the existing

PLANNING CONSIDERATION
An EMAS at the Runway 33 end is an option should destination distances increase and operations expand further outside of the peak season.

Figure 6-10: Preliminary Airside Recommendation for the ALP



DECLARED DISTANCES		
	RUNWAY 15	RUNWAY 33
TORA	6,550'	6,550'
TODA	6,550'	6,550'
ASDA	6,150'	6,550'
LDA	5,455'	6,000'

1. PROTECT FOR RSA ONLY.
2. EXISTING RSA DETERMINATION ON THE RUNWAY 33 END STILL APPLIES.
3. INCLUDES ADDITIONAL OBSTRUCTION REMOVAL ABOVE AND BEYOND WHAT IS SHOWN IN THE INSET.

LEGEND

- PROPOSED PAVEMENT
- TO BE REMOVED
- PROPOSED FENCE
- PROPOSED RUNWAY SAFETY AREA
- PROPOSED RUNWAY PROTECTION ZONE
- EXISTING RUNWAY PROTECTION ZONE
- PROPOSED TAXIWAY OBJECT FREE AREA
- EXISTING AIRPORT PROPERTY
- PROPOSED EASEMENT/FEE ACQUISITION
- POND/LAKE
- WETLAND

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Figure 6-11: Existing Terminal Expansion Opportunities

Source: Fennick McCredie Architecture Ltd.

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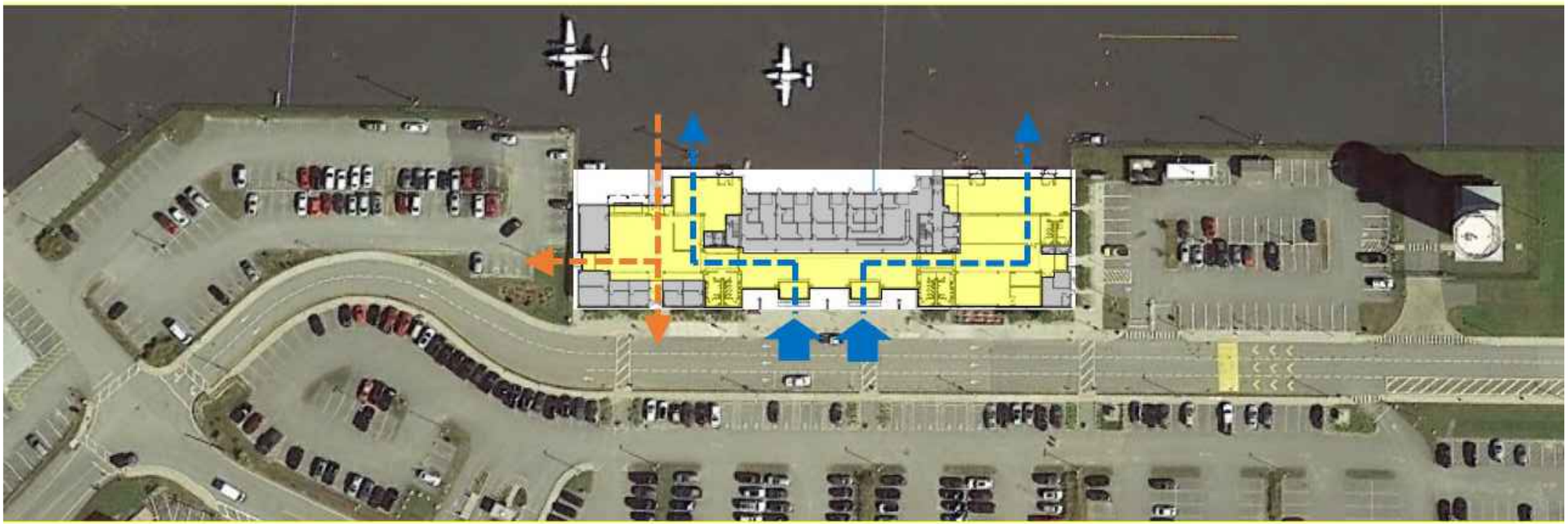
Figure 6-12: Existing Terminal Public Passenger Flow



Source: Fennick McCredie Architecture Ltd.

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building footprint via reconfiguration. Existing space deficiencies are shown in Figure 6-13.

Discussions with the Airport and stakeholders revealed the following core principles should form the basis for the evaluation and designation of a preferred alternative:

- Maximize efficiency and 'highest best use' of existing building space and infrastructure.
- Account for future trends in travel including new technology, aircraft service typologies, and ground transportation options.
- Improvements involving increased terminal space to be incrementally phased in line with available funding and to avoid 'overbuild'.
- Provide flexibility in implementation approach to effectively address evolving market demand, support airport revenue goals, meet traveler and operator needs, and maximize benefits to the Cape Cod Community.

6.3.2. Alternatives Studied to Address Space Deficiencies

The following primary alternatives were studied to establish the preferred approach to addressing the terminal space deficiencies forecasted within the 20-year planning horizon and are shown in Figure 6-14.

Terminal Alternative 1: Current Functional Organization, Existing Envelope

This alternative has the advantage of zero impact to adjacent parking areas and other site infrastructure. However, studies of various 'interior-only' reconfiguration options were unsuccessful in resolving all space deficiencies identified in the 150 peak hour passenger analysis. Therefore, Terminal Alternative 1 is not viewed as a viable long-term solution to accommodate the passengers and operational needs for the forecasted demand.

Terminal Alternative 2: Current Functional Organization, Incremental Improvements

This alternative envisages a combination of reconfiguration of existing interior space for maximum efficiency of use and isolated building additions to accommodate increased passenger and baggage demand in key areas. Interior reconfiguration allows for the additions to be smaller than would otherwise be required. In this alternative, the reconfiguration would maintain the basic terminal organization: a single terminal with secure departures to the south, arrivals/non-secure departures to the north, with airline operations/ticketing in the center.

Terminal Alternative 2 has the added advantage of a feasibly phased implementation. As such, improvements could begin with interior reconfiguration for maximum efficiency and in the future, follow-on with one or multiple isolated space additions, as appropriate, to meet demand and as funding becomes available.

Terminal Alternative 3: New Functional Organization, Incremental Improvements

This alternative changes the core functional organization of the terminal building. Rather than a single terminal with departures and arrivals at each end, the terminal is re-organized to be a secure terminal on the south end (with both departures and arrivals/bag claim functions), and an

attached, but functionally independent, non-secure terminal at the north end with its own departures and arrivals/bag claim functions for non-secure flights.

The advantage of this approach is improved passenger flow, allowing secure arrivals/departures to remain contained at one end of the terminal and eliminating the need for secure arrivals to traverse the ramp or terminal to access baggage claim at the north end. However, the capital and operational cost for duplication of baggage claim is not warranted by the level of air traffic. Also, the future of the non-secure departures is uncertain, as security requirements can and do change over time, as do airline flight schedules and destinations. Accordingly, Terminal Alternative 3 is not viewed as a viable long-term solution to accommodate the passengers and operational needs for the forecasted demand.

6.3.3. Preferred Terminal Alternative

Based upon the above core principles and evaluation of each alternative, Terminal Alternative 2 has been deemed the preferred alternative to address the forecasted demand of the terminal facilities.

As part of this analysis, the feasibility of an incrementally phased interior reconfiguration, coupled with a minor addition and allowing for future additional space expansions to ultimately meet the demand of 150 or 200 peak hour passengers, was completed and deemed viable This phased approach is shown in Figures 6-15 and 6-16. The approximately 19 rental parking spaces displaced with the expansion are anticipated to be accommodated in the main parking lot.

Phased Implementation

Modest alterations and improvements can be implemented over time in smaller individual pieces. This series of smaller projects allows the Airport maximum flexibility in addressing the evolving needs of airlines and the Transportation Security Administration (TSA) without over-investing in the needs of the moment. Prioritizing the re-purposing of existing interior space provides a pathway to significant improvements with minimal investment.

Phase 1 (Figure 6-15) identifies opportunities for re-purposing of existing space to alleviate current space deficiencies in key public areas/functions to meet 150 peak hour passenger demand. These opportunities include:

- Conversion of the existing first floor conference room to connect with and enlarge the existing bag claim area (currently significantly undersized). As part of this conversion the existing baggage slide would be extended – doubling the linear frontage for accessing of bags by passengers. Overall bag claim passenger floor space would be increased by 40 percent without need for any expansion of this building.
- Conversion of the existing restaurant/kitchen space in one of the two following ways:
    - Connect with and enlarge the TSA passenger security checkpoint queue area. Included in this conversion could be a small soft seating lounge for departing passengers who may have arrived early and are awaiting checkpoint opening. Additionally, this area could be used as a holdroom overflow space (holding of departing passengers pre-security when the current secure holdroom is at or near capacity). This latter 'overflow' functionality is particularly beneficial during

Figure 6-13: Existing Terminal Space Deficiencies

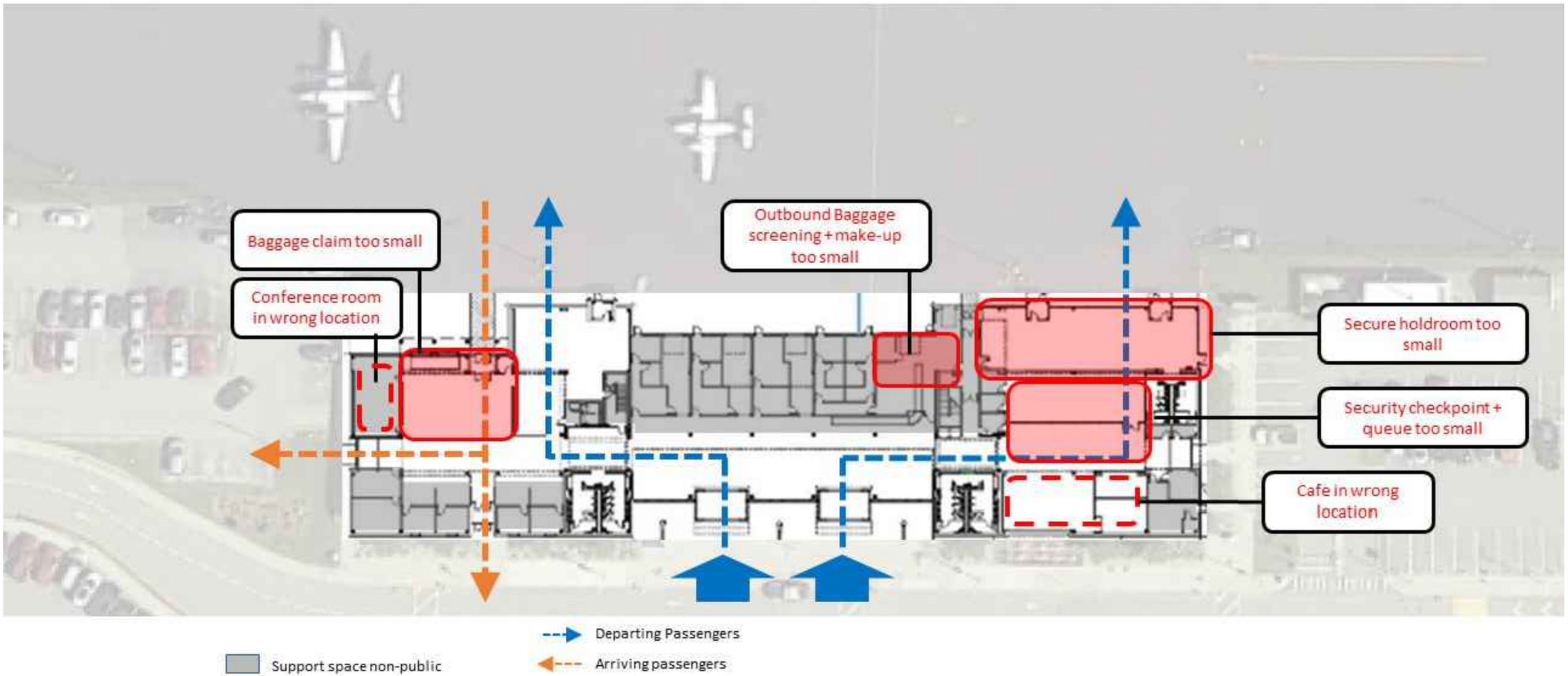

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Figure 6-14: Primary Approach Terminal Alternatives

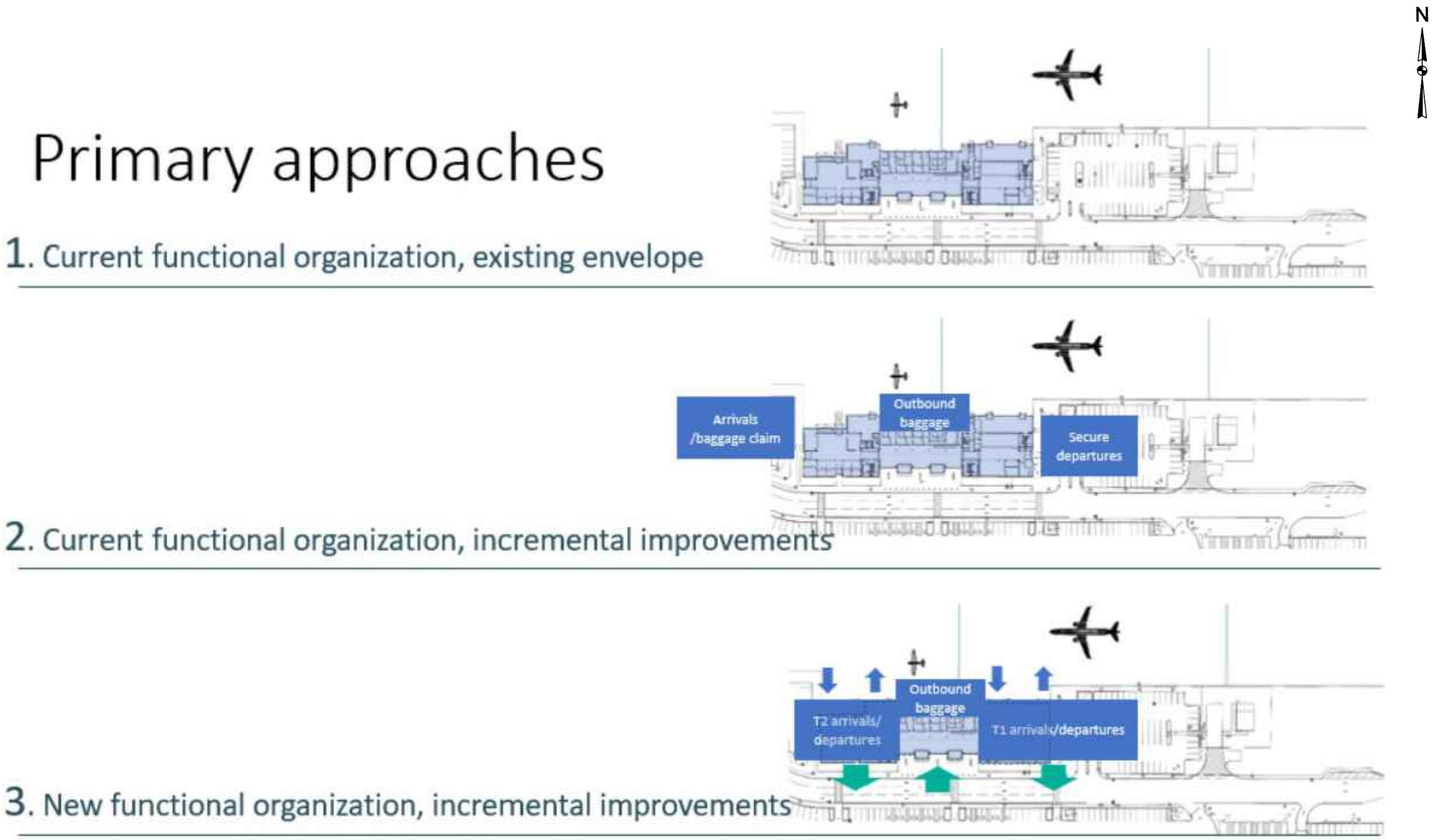

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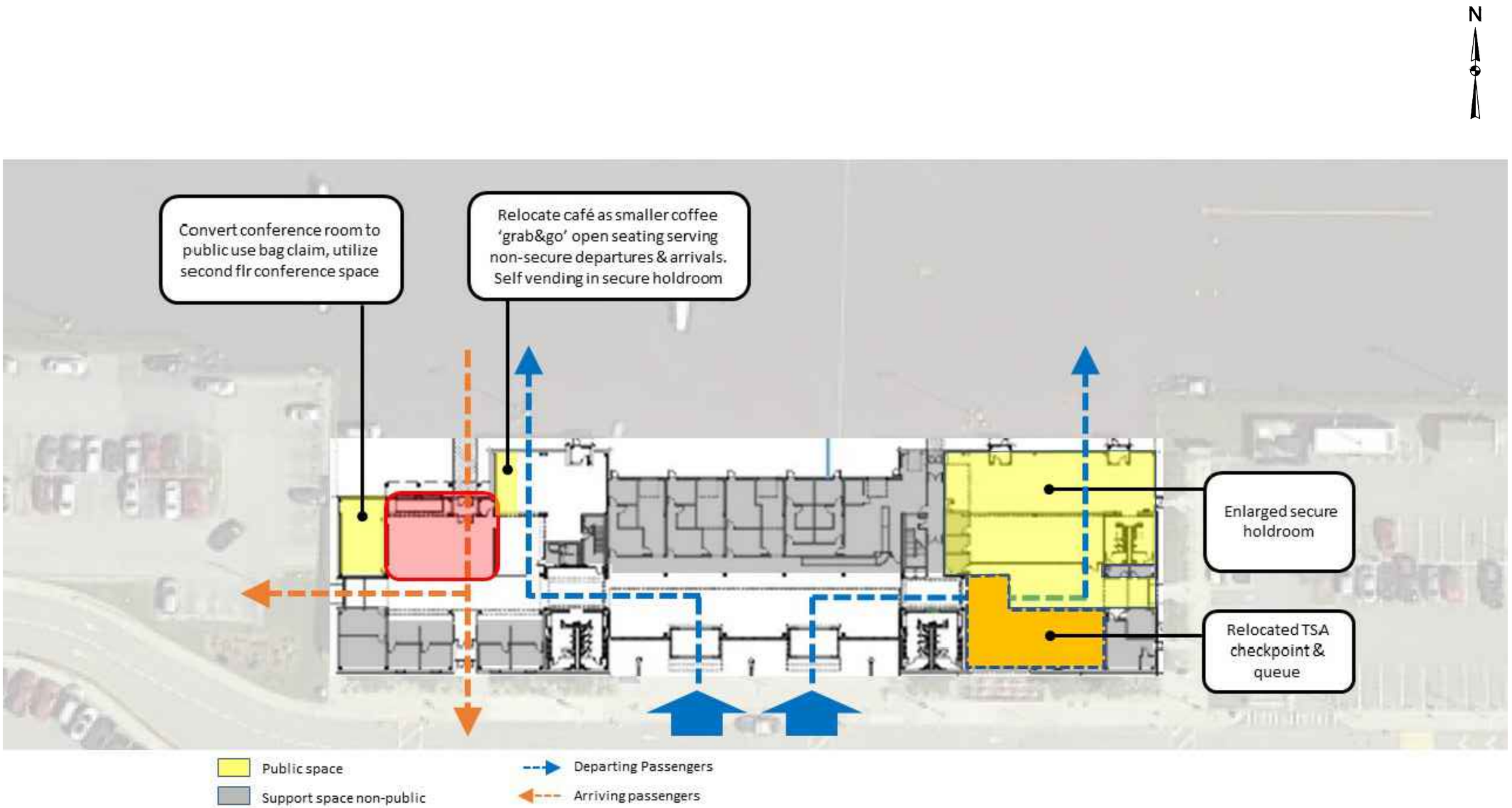
Figure 6-15: Preferred Terminal Alternative 2: Example Components of Phase 1 Reconfiguration



Source: Fennick McCredie Architecture Ltd.

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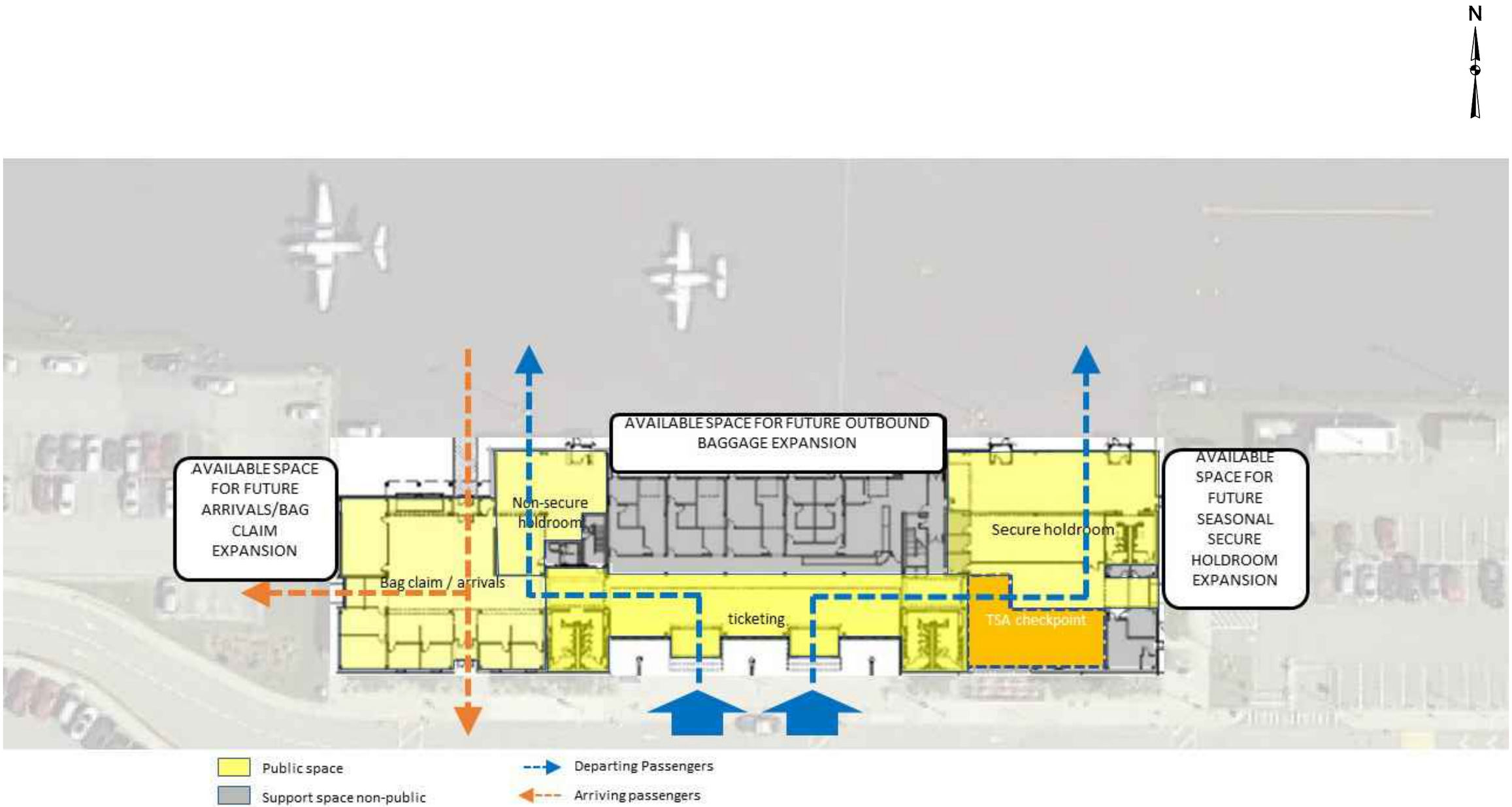
Figure 6-16: Preferred Terminal Alternative 2: Example Components of Phase 2 Reconfiguration



Source: Fennick McCredie Architecture Ltd.

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weather events which delay departing flights, as well as pandemic conditions, where social distancing is required in the secure holdroom. In either case (early arrivals or holdroom overflow), the existing exterior patio combined with interior soft seating and vending could provide a comfortable, and when necessary, socially-distanced environment for waiting departing passengers who cannot yet access the secure holdroom. In effect, this approach allows for an increase in departing passenger capacity of the terminal without requiring new construction.
    - Relocation of existing TSA passenger checkpoint into the existing restaurant space, effectively increasing the size of the secure holdroom.
- Installation of a new food and beverage counter at the existing non-secure departures area. This counter operation would be smaller than the current restaurant space and located adjacent to the bag claim. This new counter would more appropriately service the needs of passengers as well as meeters/greeters in the arrivals area.

Phase 2 (Figure 6-16) identifies strategies for cost-effective, targeted increases in key terminal space functions. Such increases would be implemented subsequent to Phase 1 repurposing and would be triggered by 200 peak hour passengers. Key guidelines for the planning and design of Phase 2 improvements include:

- Location of any new construction should occur at existing impervious areas to the greatest extent possible.
- Design of new construction should address the seasonal nature of passenger demand at the Airport. Potential strategies include semi-permanent fabric structures or permanent structures able to be closed off during low-demand seasons.
- New construction should be flexible in how it can be utilized as the aviation industry evolves over time. For example, modular construction may be used for car rental functions, in recognition of the increase in rideshare usage and the potential decrease in car rental space needs over time.
- Construction should support sustainability goals of the Airport and community, as well as anticipating future trends towards electric zero-emissions aircraft and ground transportation.

Anticipated components of Phase 2 construction include:

- Relocation of car rental counters and offices to a separate exterior building (potentially cost-effective modular construction). Such relocation would allow for significant increase in baggage claim/arrivals hall interior space to meet current space standards without the need for a major building expansion. Utilization of a modular building for this purpose would allow for ease of relocation in long-term if a second baggage claim is needed (likely in excess of 200 peak hour passengers).
- Expansion of the existing TSA baggage screening room (currently undersized) at the rear of the existing terminal.
- Construction of a seasonal holdroom space (potentially a fabric structure or permanent structure capable of being closed off-season) at the existing parking lot to the southeast of the existing secure holdroom.

6.4. GENERAL AVIATION ALTERNATIVES

The Airport currently has two GA areas on the airfield: North Ramp and East Ramp. This section looks at potential areas on the airfield that could be used for future development of aeronautical activities.

6.4.1. Summary of General Aviation Facility Requirements

In Chapter 5, *Facility Requirements*, GA needs were assessed for both existing and future demand. The following needs were identified:

- Up to six additional individual hangars
- Up to eight new conventional hangars of various sizes
- Up to 67,000 SF of additional ramp space

The GA needs of the Airport will be based on demand. However, the Airport should plan for aeronautical development both for the identified needs as well as opportunities that may come up should GA growth occur faster than forecast.

6.4.2. General Aviation Development Areas

Two areas were identified for GA development: one near the North Ramp and one off the East Ramp. On the North Ramp, approximately 8.7 acres of land were identified north of the existing ramp and west of Taxiway A. On the East Ramp, approximately 31.3 acres of land were identified north and east of the existing East Ramp. With the relocation of Taxiway B, space was opened that was previously occupied by the taxiway. Potential uses for the development areas are:

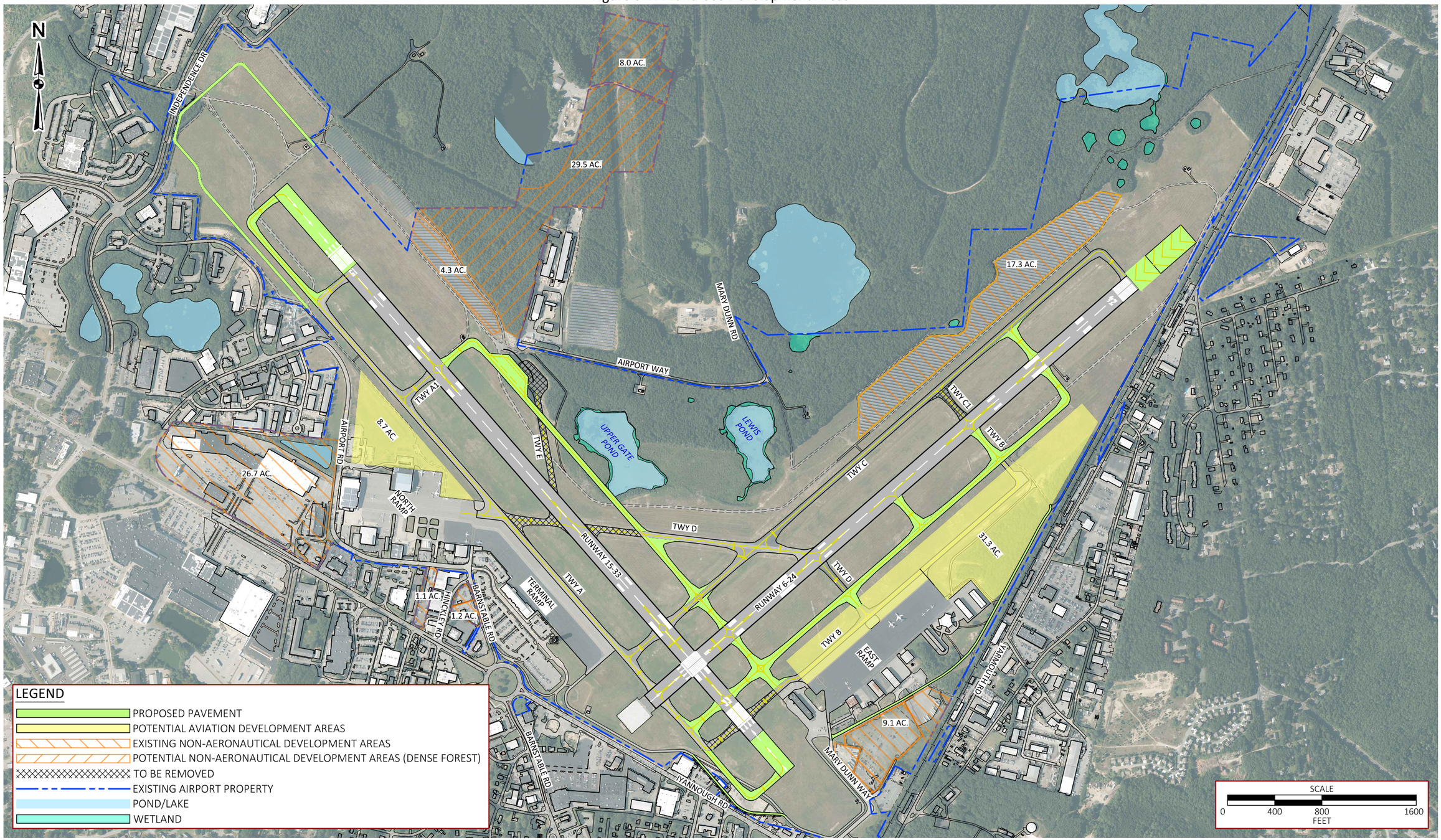
- Aviation education center
- Aviation museum
- New hangars (on demand basis)
- New ramp space (on demand basis)
- Aviation businesses including maintenance, charters, or flight schools

Figure 6-17 shows the planned development areas for the North and East Ramps. The areas identified meet and exceed the facility requirements identified in Section 6.4.1.

6.4.3. Non-Aeronautical Land Use Development Areas

Potential non-aeronautical development areas were identified and are shown in Figure 6-17. There are three non-aeronautical land use development areas located west of the Airport, one located south of the Airport, one located north of Runway 24, and three located east of Runway 15. Currently all identified areas are being leased except for the densely forested area. These areas total approximately 97.2 acres. Highest and best use of these areas will be reviewed in Chapter 7, *Implementation Plan*.

Figure 6-17: Land Use Development Areas



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6.5. SUPPORT FACILITIES

In Chapter 5, *Facility Requirements*, support facility needs were identified as follows:

- Up to six electric aircraft parking for itinerant airplane ADG II aircraft (discussed further in Section 6.7, *Green Opportunities*)
- 20,000-gallon Jet-A fuel tank
- Self-service 100LL fueling option (discussed further in Section 6.5.1, *Aircraft Fueling*)

6.5.1. Aircraft Fueling

The Airport currently offers both Jet-A and 100LL Avgas fuel. All fueling is provided via full-service fuel trucks. The Airport has three 20,000-gallon Jet-A fuel tanks. These tanks are situated on a foundation pad that was constructed with the capacity to hold four fuel tanks. Additionally, there has been a desire at the Airport to add a self-fueling option for 100LL Avgas. The existing fuel farm has space for an additional 20,000-gallon Jet-A fuel tank to be constructed as demand arises. It is recommended that a card reader be installed to provide a 100LL self-fueling option.

6.5.2. Snow Removal Equipment/Maintenance Storage

Currently, there is not enough space in the snow removal equipment (SRE)/maintenance building to store all necessary equipment. A seasonal vehicle storage structure is recommended to be constructed on the northeast side of the Airport. This facility could function as winter vehicle and equipment storage in the summer and as summer vehicles and equipment storage in the winter.

6.5.3. Other Recommendations Beyond the Master Plan

Presently, there is no direct route to access the Airport. The four most common routes by which people are directed to the Airport include: Route 6 via Exit 68, Route 6 via Exit 72, Centerville via Falmouth Road, and Waterfront via Barnstable Road. Signage is also small and sometimes unclear. Speed limits are low and there are many stops for each route.

With the renaming of the Airport, there is an opportunity for rebranding and signage standardization. The FAA cannot fund projects located off Airport property. The Airport does and will continue to coordinate with the MassDOT Highway Division and the Towns of Barnstable and Yarmouth to improve and simplify roadway access and improve wayfinding. **It is recommended that a stand-alone signage study be conducted.**

In addition to the stand-alone signage study, based on the review conducted in Chapter 3, *Environmental Overview*, **it is also recommended that an invasive species plant management plan be created.**

6.6. GREEN OPPORTUNITIES

The Airport strives to be good stewards of the environment and continuously looks for opportunities to reduce its carbon footprint. In recent years, the Airport has put in place best management practices, as well as made changes to infrastructure to help reduce the environmental impact. For more details on best management practices employed by the Airport and changes to infrastructure, refer to Chapter 3, *Environmental Overview*, Section 3.1.3.

The Airport works and will continue working together with the Cape Cod Commission and the Town of Barnstable for any green opportunities that arise above and beyond the initiatives already identified by the Airport.

Green opportunities the Airport is actively considering include:

- Installing electric aircraft charging stations
- Installing electric vehicle charging stations
- Installing solar panels on vehicle awnings and hangars
- Modifying guidelines for construction to now include initiatives for green development

Electric aircraft opportunities continue to evolve. The Airport is reserving space on either side of the terminal to plan for electric aircraft charging for both GA and commercial aircraft as shown in Figure 6-18. As the technology continues to advance, more details will be planned for in terms of electrical access and charging options for aircraft, including if charging will occur via truck or in-ground connectivity.

Best management practices employed by the Airport include the following:

- Implementation of a designated aircraft deicing and washing facility
- Purchase of an Ecologic Cart system to prevent the discharge of firefighting foam onto the ground surface during annual, federally required, testing of the foam
- Perform regular inspections to inventory hazardous materials
- Elimination of the use Airport-wide of pesticides, road salt, and deicing chemicals

Infrastructure changes that have been made to the Airport include the following:

- Closure of multiple hangar floor drains and leaching pits
- Installation of engineered cap over approximately 2.25 acres of land historically used for the deployment of firefighting foam
- Installation and maintenance of five stormwater treatment units
- Installation and maintenance of seven bioretention basins that treat stormwater runoff
- Removal of five underground fuel storage tanks and their placement above ground with double wall containment systems
- Implementation of green technology
    - Installation of a seven megawatt solar array
    - Installation of roof mounted solar arrays on hangars
    - Upgrade street and parking lot lights to LED
    - Implementation of eight electric vehicle charging stations
    - Reduction of paper within airport administration office

The Airport also strives to be a leader for green opportunities within the aviation industry, as shown in the implementation of green technology and by continuing to identify opportunities for green technology in the aviation industry as listed above. The Airport plans to continue ongoing

Figure 6-18: Reserved for Supporting Electric Aircraft

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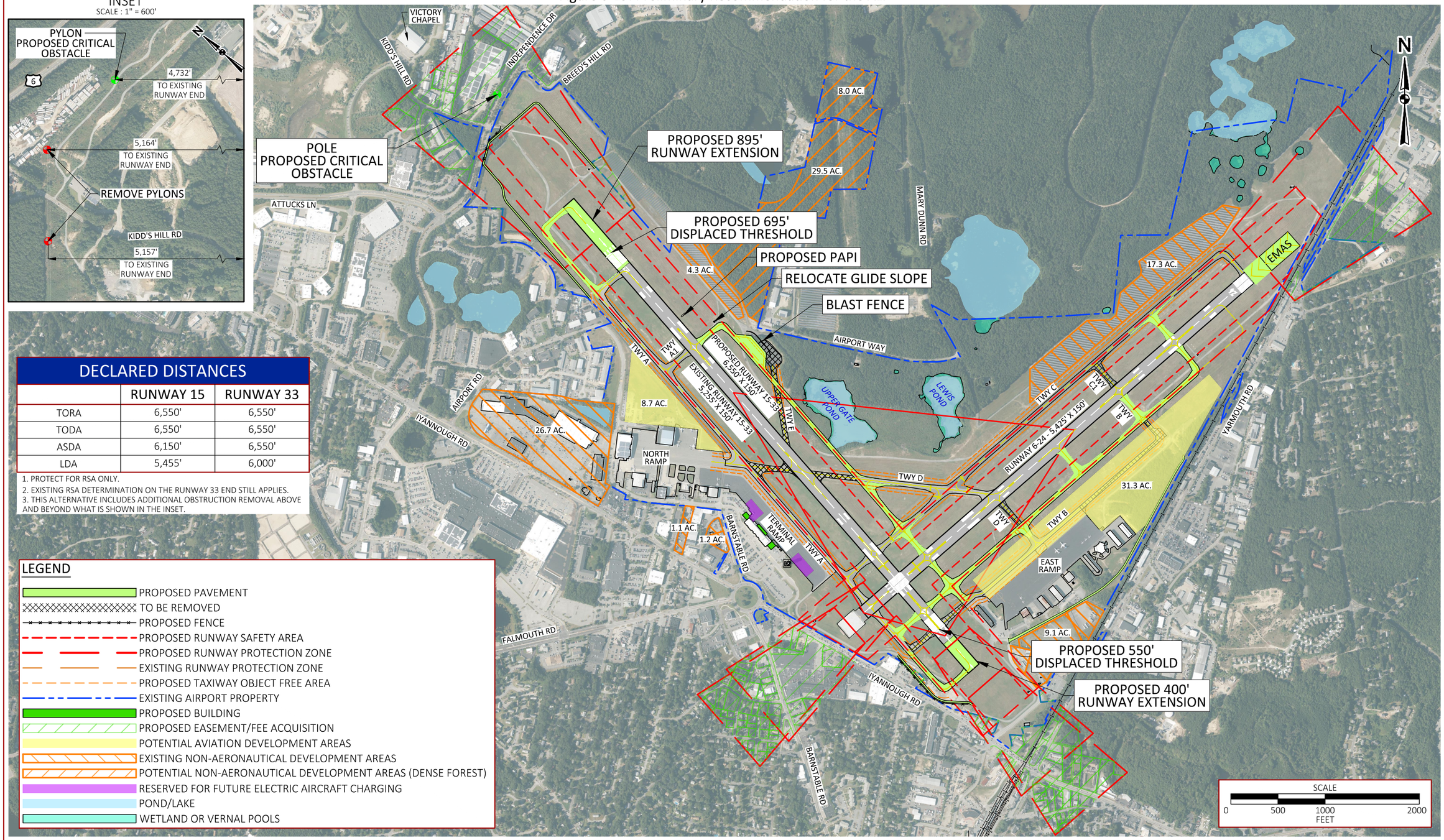
coordination efforts with the Cape Cod Commission, Town of Barnstable, and others to identify additional areas of green opportunities in the future.

6.7. PRELIMINARY RECOMMENDATION FOR THE AIRPORT LAYOUT PLAN

The Preliminary Recommendation for the ALP combines the recommended airside, terminal, and GA alternatives as well as green opportunities. This alternative is shown in **Figure 6-19**.

Figure 6-19: Preliminary Recommendation for the ALP



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2. EXISTING RSA DETERMINATION ON THE RUNWAY 33 END STILL APPLIES.
3. THIS ALTERNATIVE INCLUDES ADDITIONAL OBSTRUCTION REMOVAL ABOVE AND BEYOND WHAT IS SHOWN IN THE INSET.

LEGEND

- PROPOSED PAVEMENT
- TO BE REMOVED
- PROPOSED FENCE
- PROPOSED RUNWAY SAFETY AREA
- PROPOSED RUNWAY PROTECTION ZONE
- EXISTING RUNWAY PROTECTION ZONE
- PROPOSED TAXIWAY OBJECT FREE AREA
- EXISTING AIRPORT PROPERTY
- PROPOSED BUILDING
- PROPOSED EASEMENT/FEE ACQUISITION
- POTENTIAL AVIATION DEVELOPMENT AREAS
- EXISTING NON-AERONAUTICAL DEVELOPMENT AREAS
- POTENTIAL NON-AERONAUTICAL DEVELOPMENT AREAS (DENSE FOREST)
- RESERVED FOR FUTURE ELECTRIC AIRCRAFT CHARGING
- POND/LAKE
- WETLAND OR VERNAL POOLS

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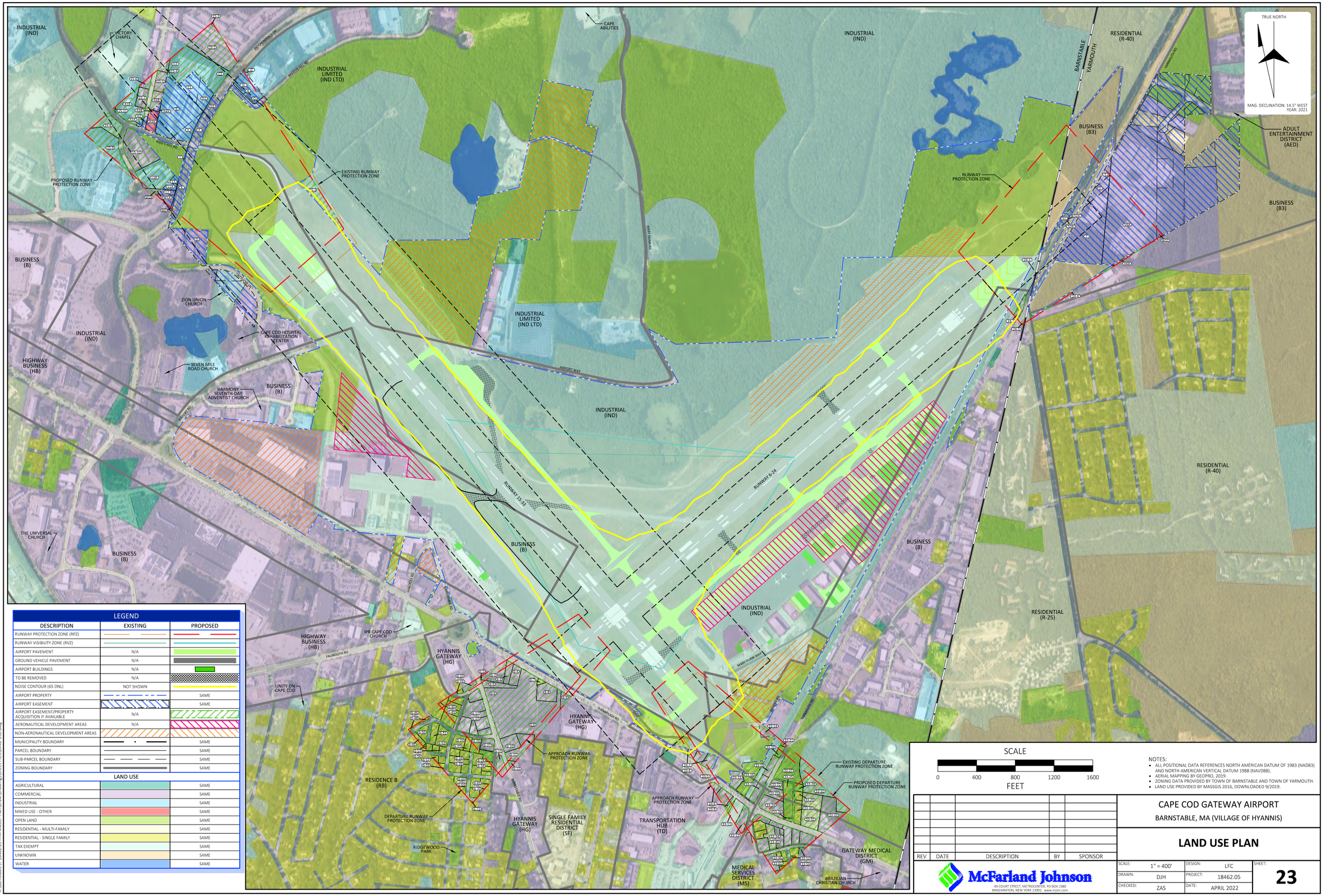
Appendix C

Terminal Expansion and Runway Safety Areas Information

Place Holder

Appendix D

Airport Layout Plan



LEGEND		
DESCRIPTION	EXISTING	PROPOSED
RUNWAY PROTECTION ZONE (RPZ)		
RUNWAY VISIBILITY ZONE (RVZ)		
AIRPORT PAVEMENT	N/A	
GROUND VEHICLE PAVEMENT	N/A	
AIRPORT BUILDINGS	N/A	
TO BE REMOVED	N/A	
NOISE CONTOUR (65 DNL)	NOT SHOWN	
AIRPORT PROPERTY		SAME
AIRPORT EASEMENT		SAME
AIRPORT EASEMENT/PROPERTY ACQUISITION IF AVAILABLE	N/A	
AERONAUTICAL DEVELOPMENT AREAS	N/A	
NON-AERONAUTICAL DEVELOPMENT AREAS		
MUNICIPALITY BOUNDARY		SAME
PARCEL BOUNDARY		SAME
SUB-PARCEL BOUNDARY		SAME
ZONING BOUNDARY		SAME
LAND USE		
AGRICULTURAL		SAME
COMMERCIAL		SAME
INDUSTRIAL		SAME
MIXED USE - OTHER		SAME
OPEN LAND		SAME
RESIDENTIAL - MULTI-FAMILY		SAME
RESIDENTIAL - SINGLE FAMILY		SAME
TAX EXEMPT		SAME
UNKNOWN		SAME
WATER		SAME

SCALE

0 400 800 1200 1600

FEET

NOTES:
- ALL POSITIONAL DATA REFERENCES NORTH AMERICAN DATUM OF 1983 (NAD83) AND NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).
- AERIAL MAPPING BY GEOPRO, 2019.
- ZONING DATA PROVIDED BY TOWN OF BARNSTABLE AND TOWN OF YARMOUTH.
- LAND USE PROVIDED BY MASSGIS 2016, DOWNLOADED 9/2019.

REV	DATE	DESCRIPTION	BY	SPONSOR

CAPE COD GATEWAY AIRPORT

BARNSTABLE, MA (VILLAGE OF HYANNIS)

LAND USE PLAN

McFarland Johnson
49 COURT STREET, METROCENTER, PO BOX 1980
BINGHAMTON, NEW YORK 13902 www.mjinc.com

SCALE:	1" = 400'	DESIGN:	LFC
DRAWN:	DJH	PROJECT:	18462.05
CHECKED:	ZAS	DATE:	APRIL 2022

SHEET: 23

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EXISTING RPZ CONTROL PLAN: RUNWAY 15

REFERENCE NUMBER	TAX PARCEL NUMBER	OWNER	LAND USE	AREA	ACTION
A1A	296_005_001	DAVLIN REALTY LLC	INDUSTRIAL	0.07 AC	EXISTING EASEMENT
A1B	296_005_001	DAVLIN REALTY LLC	INDUSTRIAL	0.33 AC	NONE
A2	N/A	N/A	ROW	0.13 AC	EXISTING EASEMENT
A3A	295_006	CONDO PARCEL	MIXED USE	0.51 AC	EXISTING EASEMENT
A3B	295_006	CONDO PARCEL	MIXED USE	0.02 AC	NONE
A4A	296_008	CONDO PARCEL	COMMERCIAL	0.09 AC	EXISTING EASEMENT
A4B	296_008	CONDO PARCEL	COMMERCIAL	0.29 AC	NONE
B	296_025	ONE CENTER PLACE LP	INDUSTRIAL	3.78 AC	EXISTING EASEMENT
C1	296_025	ONE CENTER PLACE LP	INDUSTRIAL	0.93 AC	EXISTING EASEMENT
C2	296_025	ONE CENTER PLACE LP	INDUSTRIAL	2.03 AC	NONE
D1	296_025	ONE CENTER PLACE LP	INDUSTRIAL	0.76 AC	EXISTING EASEMENT
D2	N/A	N/A	ROW	0.48 AC	EXISTING EASEMENT
E	296_025	ONE CENTER PLACE LP	INDUSTRIAL	0.71 AC	EXISTING EASEMENT
F	N/A	N/A	ROW	0.88 AC	EXISTING EASEMENT
G	N/A	N/A	ROW	0.53 AC	EXISTING EASEMENT
H	314_023	S-L SNACK MA LLC	INDUSTRIAL	0.10 AC	EXISTING EASEMENT
I1	314_023	S-L SNACK MA LLC	INDUSTRIAL	1.06 AC	EXISTING EASEMENT
I2	314_023	S-L SNACK MA LLC	INDUSTRIAL	0.05 AC	NONE
J	N/A	N/A	ROW	0.04 AC	EXISTING EASEMENT
K	N/A	N/A	ROW	1.51 AC	EXISTING EASEMENT
L1A	295_008	SWITCH GEARS LP	INDUSTRIAL	0.32 AC	EXISTING EASEMENT
L1B	295_008	SWITCH GEARS LP	INDUSTRIAL	1.82 AC	NONE
L2	295_009	SWITCH GEARS LP	COMMERCIAL	0.20 AC	EXISTING EASEMENT
L3	N/A	N/A	ROW	0.01 AC	EXISTING EASEMENT
M1A	295_009	SWITCH GEARS LP	COMMERCIAL	0.31 AC	EXISTING EASEMENT
M1B	295_009	SWITCH GEARS LP	COMMERCIAL	0.29 AC	NONE
M2	N/A	N/A	ROW	0.05 AC	EXISTING EASEMENT
O	295_018_B01	RENAISSANCE 2000 LLC	COMMERCIAL	0.22 AC	EXISTING EASEMENT
15-1	313_005_B00	BARNSTABLE FIRE DISTRICT	TAX EXEMPT	1.82 AC	NONE
15-2	296_031	COASTAL SUN LP	COMMERCIAL	1.51 AC	NONE
15-5	296_010	52 THORNTON DRIVE LLC	COMMERCIAL	0.01 AC	NONE
15-7	296_007	THORNTON DRIVE LP	COMMERCIAL	0.01 AC	NONE
15-8	295_004_001	CAPE COD HOSPITAL	TAX EXEMPT	0.11 AC	NONE
15-9	295_011	SWITCH GEARS LP	INDUSTRIAL	1.18 AC	NONE
15-10	295_007	CONDO PARCEL	COMMERCIAL	2.19 AC	NONE

EXISTING RPZ CONTROL PLAN: RUNWAY 33

REFERENCE NUMBER	TAX PARCEL NUMBER	OWNER	LAND USE	AREA	ACTION
33-1	328_109	PB&C LLC	COMMERCIAL	0.00 AC	NONE
33-2	328_110	CYR, LUKE & MITSIS, ALEC	COMMERCIAL	0.11 AC	NONE
33-3	328_111	GLADISH, SCOTT P, TR	COMMERCIAL	0.28 AC	NONE
33-4	328_112	B & A FOURNIER REALTY INC	COMMERCIAL	0.41 AC	NONE
33-5	328_205	HYANNIS SERIES ONE LLC	COMMERCIAL	0.01 AC	NONE
33-6	328_237	SHORE, CARYLN & CORD M TRS	COMMERCIAL	0.17 AC	NONE
33-7	328_203	AMERIGAS PROPANE LP	COMMERCIAL	0.40 AC	NONE
33-8	328_202	GAS INC	COMMERCIAL	0.06 AC	NONE
33-9	328_200	GAS INC	COMMERCIAL	0.06 AC	NONE
33-10	327_156_002	MASSACHUSETTS, COMMONWEALTH OF	TAX EXEMPT	0.51 AC	NONE
33-11	327_156_001	MASSACHUSETTS, COMMONWEALTH OF	TAX EXEMPT	0.00 AC	NONE
33-12	328_238	CARLIN CORNER, LLC	COMMERCIAL	0.51 AC	NONE
33-13	328_195	140 YARMOUTH ROAD LLC	COMMERCIAL	0.11 AC	NONE
33-14	328_126	HOP, LLC	COMMERCIAL	0.27 AC	NONE
33-15	328_132	CONDO PARCEL	COMMERCIAL	0.48 AC	NONE
33-16	328_131	ATLANTIS IYANOUGH REALTY LLC	COMMERCIAL	1.10 AC	NONE
33-17	328_183	MASSACHUSETTS, COMMONWEALTH OF	TAX EXEMPT	0.96 AC	NONE
33-18	328_137	GEMAC INC	COMMERCIAL	0.48 AC	NONE
33-19	328_138	GEMAC, INC	COMMERCIAL	0.36 AC	NONE
33-20	328_229	BARNSTABLE, TOWN OF (MUN)	OPEN LAND	0.16 AC	NONE
33-21	328_139	ROBICHAUD, JOHN R & JAMES FRANCIS	COMMERCIAL	0.04 AC	NONE
33-22	328_148	MACGREGOR, J BRUCE TR	COMMERCIAL	0.26 AC	NONE
33-23	328_149	MACDONALD, DOUGLAS E TR	COMMERCIAL	0.43 AC	NONE
33-24	328_151	HESS RETAIL STORES LLC	COMMERCIAL	0.90 AC	NONE
33-25	328_147	KORPELA, TOINI TAIMI ESTER ESTATE OF	OPEN LAND	0.68 AC	NONE
33-27	328_142_002	BARNSTABLE, TOWN OF (BRNWATER)	OPEN LAND	1.48 AC	NONE
33-28	328_143	KORPELA, TOINI TAIMI ESTER ESTATE OF	OPEN LAND	0.16 AC	NONE
33-29	328_144	LOPES-MORRIS, CAROL	RESIDENTIAL	0.17 AC	NONE
33-30	328_145	KORPELA, TOINI TAIMI ESTER ESTATE OF	RESIDENTIAL	0.05 AC	NONE
33-31	328_142_001	BARNSTABLE, TOWN OF (BRNWATER)	TAX EXEMPT	1.17 AC	NONE
33-32	328_152	CONDO PARCEL	RESIDENTIAL	0.06 AC	NONE
33-34	328_157	153 REALTY LLC	COMMERCIAL	0.24 AC	NONE
33-35	328_158	MAHONEY, RICHARD G & MAUREEN J	RESIDENTIAL	0.29 AC	NONE
33-36	328_159	ALJ REALTY CORPORATION	RESIDENTIAL	0.15 AC	NONE
33-37	328_160	CICCARELLI, EUGENE C III & EVANS, SUSAN	COMMERCIAL	0.00 AC	NONE
33-38	328_156_002	TRACY, CONSTANCE	COMMERCIAL	0.06 AC	NONE
33-39	328_231	FINKEL, HOWARD J TR	RESIDENTIAL	0.06 AC	NONE

EXISTING AND PROPOSED RPZ CONTROL PLAN: RUNWAY 6

REFERENCE NUMBER	TAX PARCEL NUMBER	OWNER	LAND USE	AREA	ACTION
6-1	311_030_001	ROTARY REALTY LLC	COMMERCIAL	0.01 AC	ACQUISITION
6-2	311_027	AIRVIEW LLC	COMMERCIAL	0.77 AC	ACQUISITION
6-3	311_082	AIRVIEW LLC	COMMERCIAL	0.34 AC	ACQUISITION
6-4	311_081	AIRVIEW LLC	COMMERCIAL	0.43 AC	ACQUISITION
6-5	311_026	VINIOS, LOUIS N TR	COMMERCIAL	0.44 AC	ACQUISITION
6-6	328_070	VINIOS, LOUIS N TR	COMMERCIAL	7.38 AC	ACQUISITION
6-7	329_002	BARNSTABLE, TOWN OF (MUN)	OPEN LAND	0.08 AC	ACQUISITION
6-8	329_001	HENNESSEY, DEBRA HENNESEY TR	COMMERCIAL	0.81 AC	ACQUISITION
6-9	328_071	VINIOS, LOUIS N TR	COMMERCIAL	0.23 AC	ACQUISITION
6-10	310_142	TAMBURRINO, LOUIS	COMMERCIAL	0.62 AC	ACQUISITION
6-11	310_143	259 NORTH ST LP	COMMERCIAL	0.89 AC	ACQUISITION
6-12	310_144	FIRST LIGHT HOLDINGS LLC	COMMERCIAL	0.07 AC	ACQUISITION
6-13	310_174	FIRST NAT BANK OF BOSTON	COMMERCIAL	0.41 AC	ACQUISITION
6-14	311_037	KAMBERI FAMILY LLC	COMMERCIAL	0.01 AC	ACQUISITION
6-15	311_038	READ, FRANCES J	RESIDENTIAL	0.05 AC	ACQUISITION
6-16	311_032	FINKELSTEIN, RUTH TR	COMMERCIAL	0.19 AC	ACQUISITION
6-17	310_119	CUMBERLAND FARMS INC	COMMERCIAL	0.30 AC	ACQUISITION
6-18	310_120	PORKKA, DAVID T & PARKKA, DANIEL J TRS	COMMERCIAL	0.68 AC	ACQUISITION
6-19	310_141	TRACY, AIDA	COMMERCIAL	0.19 AC	ACQUISITION
6-20	310_140	FAIRBANKS FEBRUARY LLC	COMMERCIAL	0.39 AC	ACQUISITION
6-21	310_381	FAIRBANKS FEBRUARY LLC	COMMERCIAL	0.20 AC	ACQUISITION
6-22	310_139	FAIRBANKS FEBRUARY LLC	COMMERCIAL	0.23 AC	ACQUISITION
6-23	310_121	CONDO PARCEL	COMMERCIAL	0.44 AC	ACQUISITION
6-24	310_123	PACHECO, KEVIN J & BONNIE TRS	RESIDENTIAL	0.42 AC	ACQUISITION
6-25	310_130	PACHECO, KEVIN J & BONNIE TRS	RESIDENTIAL	0.21 AC	ACQUISITION
6-26	310_131	BOWMAN, CHRISTINE C	RESIDENTIAL	0.34 AC	ACQUISITION
6-27	310_138	ALTY, TIMOTHY P & RYAN J TRS	COMMERCIAL	0.39 AC	ACQUISITION
6-28	310_137	ALTY, TIMOTHY P & RYAN J TRS	OPEN LAND	0.31 AC	ACQUISITION
6-29	310_136	CHALPARA, VASILI & ROSETTA	RESIDENTIAL	0.12 AC	ACQUISITION
6-30	310_135	GUERRINI, STEVEN J	RESIDENTIAL	0.12 AC	ACQUISITION
6-31	310_134	AKTOV LLC	RESIDENTIAL	0.10 AC	ACQUISITION
6-32	310_133	KAPLAN, CAROLE & MILLER, PATRICIA A	RESIDENTIAL	0.21 AC	ACQUISITION
6-33	310_132	DOERFLER, DAVID A	RESIDENTIAL	0.28 AC	ACQUISITION
6-34	310_129	TROWBRIDGE, CORNELIUS MILLER III	RESIDENTIAL	0.21 AC	ACQUISITION
6-35	310_128	MORRISON, SUSAN M	RESIDENTIAL	0.12 AC	ACQUISITION
6-36	310_127	SANTA ANA, AIRTON F & ERIN D	RESIDENTIAL	0.15 AC	ACQUISITION
6-37	310_126	ALMAS, DANIEL P & MARY L	RESIDENTIAL	0.27 AC	ACQUISITION
6-38	310_125	58 LEWIS STREET LLC	RESIDENTIAL	0.17 AC	ACQUISITION
6-39	310_124	FICHTER, PAUL M	RESIDENTIAL	0.17 AC	ACQUISITION
6-40	310_113	PRYOR, CLARISSA	RESIDENTIAL	0.26 AC	ACQUISITION
6-41	310_288	19 BEARSE ROAD LLC	RESIDENTIAL	0.09 AC	ACQUISITION
6-42	310_117	GARBAGE GONE LLC	RESIDENTIAL	0.23 AC	ACQUISITION
6-43	310_116	WINSLOW, ELISHA F IV & STEPHEN A	RESIDENTIAL	0.22 AC	ACQUISITION
6-44	310_115	RODRIGUEZ, FELIPE A & VILMA	RESIDENTIAL	0.21 AC	ACQUISITION
6-45	310_114	CHAVEZ, HUGO A & LEMUS, SANDRA L	RESIDENTIAL	0.40 AC	ACQUISITION
6-46	310_108	FREDA, ANTHONY P	RESIDENTIAL	0.02 AC	ACQUISITION
6-47	310_109	DONOHUE, RUBY PIERCE	RESIDENTIAL	0.02 AC	ACQUISITION
6-48	310_110	MORIN, MICHELE L	RESIDENTIAL	0.04 AC	ACQUISITION
6-49	310_055	AGUIAR, CHARLES W & SARAH J	RESIDENTIAL	0.15 AC	ACQUISITION
6-50	310_054	FARIA, ROBERT A	RESIDENTIAL	0.30 AC	ACQUISITION
6-51	310_053	FARIA, ROBERT A & CHARLES J	RESIDENTIAL	0.34 AC	ACQUISITION
6-52	310_052	GILMOUR, LISA TR	RESIDENTIAL	0.57 AC	ACQUISITION
6-53	310_051	TWIN HOLDINGS LLC	RESIDENTIAL	0.11 AC	ACQUISITION
6-54	310_050	PINO, ANTHONY & PINO, DANIEL A	RESIDENTIAL	0.12 AC	ACQUISITION
6-55	310_049	CARVER, THOMAS E	RESIDENTIAL	0.12 AC	ACQUISITION
6-56	310_048	PINO, ANTHONY & PINO, DANIEL A	RESIDENTIAL	0.02 AC	ACQUISITION
6-57	310_047	DUFUR, DANA H & FLORENCE M	RESIDENTIAL	0.08 AC	ACQUISITION
6-58	310_046	MORAN, NILE	RESIDENTIAL	0.12 AC	ACQUISITION
6-59	310_045	FRAGOSA, JONATHAN D	RESIDENTIAL	0.07 AC	ACQUISITION
6-60	310_216	KIMBRO, FLORENE K	RESIDENTIAL	0.04 AC	ACQUISITION
6-61	310_215	ONEILL, SANDRA GREENE	RESIDENTIAL	0.12 AC	ACQUISITION
6-62	310_214	MATHER, DONNA	RESIDENTIAL	0.16 AC	ACQUISITION
6-63	310_226	TEJADA, TULIO C & MARIA E	RESIDENTIAL	0.08 AC	ACQUISITION
6-64	310_225	GILCHRIST, JODIE ANNE & KAREN M &	RESIDENTIAL	0.00 AC	ACQUISITION
6-65	310_213	VELOSO, CHRISTIANO & ADRIANA R	RESIDENTIAL	0.23 AC	ACQUISITION
6-66	310_212	DIAZ, JOSE R & DORIS M	RESIDENTIAL	0.12 AC	ACQUISITION
6-67	310_211	BADE, CHLOE A	RESIDENTIAL	0.08 AC	ACQUISITION
6-68	310_210	HERNANDEZ, RAFAEL	RESIDENTIAL	0.04 AC	ACQUISITION
6-69	310_209	KULLAS, RICHARD M & JEAN N	RESIDENTIAL	0.00 AC	ACQUISITION
6-70	310_227	MOLONEY, SHANNON	RESIDENTIAL	0.23 AC	ACQUISITION
6-71	310_228	SULLIVAN, JOHN BURNS	RESIDENTIAL	0.01 AC	ACQUISITION

EXISTING AND PROPOSED RPZ CONTROL PLAN: RUNWAY 24

REFERENCE NUMBER	TAX PARCEL NUMBER	OWNER	LAND USE	AREA	ACTION
S1	UNKNOWN	UNKNOWN	UNKNOWN	0.40 AC	EXISTING EASEMENT
S2A	72.3	UNKNOWN	UNKNOWN	0.01 AC	EXISTING EASEMENT
S2B	72.3	UNKNOWN	UNKNOWN	0.00 AC	ACQUISITION
T	73.11	UNKNOWN	COMMERCIAL	5.63 AC	EXISTING EASEMENT
U	73.11	UNKNOWN	COMMERCIAL	0.52 AC	EXISTING EASEMENT
V6A	73.10.1.1	UNKNOWN	COMMERCIAL	6.76 AC	EXISTING EASEMENT
V6B	73.10.1.1	UNKNOWN	COMMERCIAL	0.09 AC	ACQUISITION
W11	73.10.1.1	UNKNOWN	COMMERCIAL	0.07 AC	EXISTING EASEMENT
24-1	328_183	MASSACHUSETTS, COMMONWEALTH OF	TAX EXEMPT	1.16 AC	NONE
24-2	345_008	HOPKINS, JUNIUS B JR	COMMERCIAL	0.27 AC	ACQUISITION
24-3	345_009	JJ IMAD ENTERPRISES LLC	COMMERCIAL	0.01 AC	ACQUISITION
24-4	62.6	UNKNOWN	COMMERCIAL	0.38 AC	ACQUISITION

PROPOSED RPZ CONTROL PLAN: RUNWAY 15

REFERENCE NUMBER	TAX PARCEL NUMBER	OWNER	LAND USE	AREA	ACTION
A1A	296_005_001	DAVLIN REALTY LLC	INDUSTRIAL	0.07 AC	EXISTING EASEMENT
A1B	296_005_001	DAVLIN REALTY LLC	INDUSTRIAL	1.44 AC	ACQUISITION
A2	N/A	N/A	ROW	0.13 AC	EXISTING EASEMENT
A3A	295_006	CONDO PARCEL	MIXED USE	0.51 AC	EXISTING EASEMENT
A3B	295_006	CONDO PARCEL	MIXED USE	0.02 AC	ACQUISITION
A4A	296_008	CONDO PARCEL	COMMERCIAL	0.09 AC	EXISTING EASEMENT
A4B	296_008	CONDO PARCEL	COMMERCIAL	0.40 AC	ACQUISITION
B	296_025	ONE CENTER PLACE LP	INDUSTRIAL	3.94 AC	EXISTING EASEMENT
C1	296_025	ONE CENTER PLACE LP	INDUSTRIAL	0.93 AC	EXISTING EASEMENT
C2	296_025	ONE CENTER PLACE LP	INDUSTRIAL	3.61 AC	ACQUISITION
D1	296_025	ONE CENTER PLACE LP	INDUSTRIAL	0.76 AC	EXISTING EASEMENT
D2	N/A	N/A	ROW	0.48 AC	EXISTING EASEMENT
E	296_025	ONE CENTER PLACE LP	INDUSTRIAL	0.71 AC	EXISTING EASEMENT
F	N/A	N/A	ROW	0.88 AC	EXISTING EASEMENT
G	N/A	N/A	ROW	0.50 AC	EXISTING EASEMENT
H	314_023	S-L SNACK MA LLC	INDUSTRIAL	0.10 AC	EXISTING EASEMENT
I1	314_023	S-L SNACK MA LLC	INDUSTRIAL	0.87 AC	EXISTING EASEMENT
J	N/A	N/A	ROW	0.04 AC	EXISTING EASEMENT
K	N/A	N/A	ROW	1.46 AC	EXISTING EASEMENT
L1A	295_008	SWITCH GEARS LP	INDUSTRIAL	0.32 AC	EXISTING EASEMENT
L1B	295_008	SWITCH GEARS LP	INDUSTRIAL	1.78 AC	ACQUISITION
L2	295_009	SWITCH GEARS LP	COMMERCIAL	0.20 AC	EXISTING EASEMENT
L3	N/A	N/A	ROW	0.01 AC	EXISTING EASEMENT
M1A	295_009	SWITCH GEARS LP	COMMERCIAL	0.28 AC	EXISTING EASEMENT
M1B	295_009	SWITCH GEARS LP	COMMERCIAL	0.10 AC	ACQUISITION
M2	N/A	N/A	ROW	0.04 AC	EXISTING EASEMENT
O	295_018_B01	RENAISSANCE 2000 LLC	COMMERCIAL	0.11 AC	EXISTING EASEMENT
15-1	313_005_B00	BARNSTABLE FIRE DISTRICT	TAX EXEMPT	1.17 AC	ACQUISITION
15-2	296_031	COASTAL SUN LP	COMMERCIAL	2.73 AC	ACQUISITION
15-3	314_041	CONDO PARCEL	COMMERCIAL	0.02 AC	ACQUISITION
15-4	296_012	CONDO PARCEL	COMMERCIAL	0.18 AC	ACQUISITION
15-5	296_010	52 THORNTON DRIVE LLC	COMMERCIAL	0.50 AC	ACQUISITION
15-6	296_009	GLOWACKI, WALTER J & WALTER J GLOWACKI	COMMERCIAL	0.20 AC	ACQUISITION
15-7	296_007	THORNTON DRIVE LP	COMMERCIAL	0.50 AC	ACQUISITION
15-8	295_004_001	CAPE COD HOSPITAL	TAX EXEMPT	0.88 AC	ACQUISITION
15-9	295_011	SWITCH GEARS LP	INDUSTRIAL	1.60 AC	ACQUISITION
15-10	295_007	CONDO PARCEL	COMMERCIAL	2.19 AC	ACQUISITION
15-11	296_005_002	VICTORY CHAPEL CHRIST FELLOW CHURCH CC	TAX EXEMPT	0.01 AC	ACQUISITION

PROPOSED RPZ CONTROL PLAN: RUNWAY 33

REFERENCE NUMBER	TAX PARCEL NUMBER	OWNER	LAND USE	AREA	ACTION
33-1	328_109	PB&C LLC	COMMERCIAL	0.00 AC	ACQUISITION
33-2	328_110	CYR, LUKE & MITSIS, ALEC	COMMERCIAL	0.11 AC	ACQUISITION
33-3	328_111	GLADISH, SCOTT P, TR	COMMERCIAL	0.28 AC	ACQUISITION
33-4	328_112	B & A FOURNIER REALTY INC	COMMERCIAL	0.41 AC	ACQUISITION
33-5	328_205	HYANNIS SERIES ONE LLC	COMMERCIAL	0.01 AC	ACQUISITION
33-6	328_237	SHORE, CARYLN & CORD M TRS	COMMERCIAL	0.17 AC	ACQUISITION
33-7	328_203	AMERIGAS PROPANE LP	COMMERCIAL	0.40 AC	ACQUISITION
33-8	328_202	GAS INC	COMMERCIAL	0.06 AC	ACQUISITION
33-9	328_200	GAS INC	COMMERCIAL	0.06 AC	ACQUISITION
33-10	327_156_002	MASSACHUSETTS, COMMONWEALTH OF	TAX EXEMPT	0.51 AC	ACQUISITION
33-11	327_156_001	MASSACHUSETTS, COMMONWEALTH OF	TAX EXEMPT	0.00 AC	ACQUISITION
33-12	328_238	CARLIN CORNER, LLC	COMMERCIAL	0.51 AC	ACQUISITION
33-14	328_126	HOP, LLC	COMMERCIAL	0.27 AC	ACQUISITION
33-15	328_132	CONDO PARCEL	COMMERCIAL	0.48 AC	ACQUISITION
33-16	328_131	ATLANTIS IYANOUGH REALTY LLC	COMMERCIAL	1.10 AC	ACQUISITION
33-17	328_183	MASSACHUSETTS, COMMONWEALTH OF	TAX EXEMPT	0.96 AC	NONE
33-18	328_137	GEMAC INC	COMMERCIAL	0.48 AC	ACQUISITION
33-19	328_138	GEMAC, INC	COMMERCIAL	0.36 AC	ACQUISITION
33-20	328_229	BARNSTABLE, TOWN OF (MUN)	OPEN LAND	0.16 AC	ACQUISITION
33-21	328_139	ROBICHAUD, JOHN R & JAMES FRANCIS	COMMERCIAL	0.04 AC	ACQUISITION
33-22	328_148	MACGREGOR, J BRUCE TR	COMMERCIAL	0.26 AC	ACQUISITION
33-23	328_149	MACDONALD, DOUGLAS E TR	COMMERCIAL	0.43 AC	ACQUISITION
33-24	328_151	HESS RETAIL STORES LLC	COMMERCIAL	0.92 AC	ACQUISITION
33-25	328_147	KORPELA, TOINI TAIMI ESTER ESTATE OF	OPEN LAND	0.81 AC	ACQUISITION
33-26	328_146	YOUNG, RAYMOND H	OPEN LAND	0.05 AC	ACQUISITION
33-27	328_142_002	BARNSTABLE, TOWN OF (BRNWATER)	OPEN LAND	1.48 AC	ACQUISITION
33-28	328_143	KORPELA, TOINI TAIMI ESTER ESTATE OF	OPEN LAND	0.16 AC	ACQUISITION
33-29	328_144	LOPES-MORRIS, CAROL	RESIDENTIAL	0.17 AC	ACQUISITION
33-30	328_145	KORPELA, TOINI TAIMI ESTER ESTATE OF	RESIDENTIAL	0.41 AC	ACQUISITION
33-31	328_142_001	BARNSTABLE, TOWN OF (BRNWATER)	TAX EXEMPT	1.60 AC	ACQUISITION
33-32	328_152	CONDO PARCEL	RESIDENTIAL	1.57 AC	ACQUISITION
33-33	343_012	MACGREGOR, J BRUCE TR	COMMERCIAL	1.37 AC	ACQUISITION
33-34	328_157	153 REALTY LLC	COMMERCIAL	0.24 AC	ACQUISITION
33-35	328_158	MAHONEY, RICHARD G & MAUREEN J	RESIDENTIAL	0.29 AC	ACQUISITION
33-36	328_159	ALJ REALTY CORPORATION	RESIDENTIAL	0.20 AC	ACQUISITION
33-37	328_160	CICCARELLI, EUGENE C III & EVANS, SUSAN	COMMERCIAL	0.34 AC	ACQUISITION
33-38	328_156_002	TRACY, CONSTANCE	COMMERCIAL	0.15 AC	ACQUISITION
33-39	328_231	FINKEL, HOWARD J TR	RESIDENTIAL	0.50 AC	ACQUISITION
33-40	328_182	TRACY, JAY H TR	COMMERCIAL	0.06 AC	ACQUISITION
33-41	328_162	TRACY, JAY H TR	COMMERCIAL	0.35 AC	ACQUISITION
33-42	328_156_001	TRACY, JAY TR	COMMERCIAL	0.39 AC	ACQUISITION
33-43	328_155	ZINOV, DMITRY TR	COMMERCIAL	0.29 AC	ACQUISITION
33-44	328_154	CONDO PARCEL	COMMERCIAL	0.39 AC	ACQUISITION
33-45	328_153	89 IYANOUGH LLC	MIXED USE	0.01 AC	ACQUISITION
33-46	328_176	100 CAMP STREET LLC	COMMERCIAL	0.38 AC	ACQUISITION
33-47	328_175	BAYRIDGE REALTY LLC	RESIDENTIAL	0.13 AC	ACQUISITION
33-48	328_174	SWEETMAN, BARBARA J & DONADIO, JAY M	RESIDENTIAL	0.12 AC	ACQUISITION
33-49	328_173	GRADE, NATHAN A	RESIDENTIAL	0.09 AC	ACQUISITION
33-50	328_172	ROBINSON, NEIL R	RESIDENTIAL	0.03 AC	ACQUISITION
33-51	328_177	GROOM, JAMES R & MARYANN M	RESIDENTIAL	0.02 AC	ACQUISITION
33-52	328_168	BENCE, ARTHUR L & ELOVITZ, GERALD P	COMMERCIAL	0.06 AC	ACQUISITION
33-53	328_169	REIS, JUSTINO S	RESIDENTIAL	0.16 AC	ACQUISITION
33-54	328_170	LESCAULT, PATRICIA A & DENIM A	RESIDENTIAL	0.03 AC	ACQUISITION

REV	DATE	DESCRIPTION	BY	SPONSOR

CAPE COD GATEWAY AIRPORT

BARNSTABLE, MA (VILLAGE OF HYANNIS)

LAND USE TABLES

McFarland Johnson
49 COURT STREET, METROCENTER, PO BOX 1980
BINGHAMTON, NEW YORK 13902 www.mjinc.com

SCALE: NONE	DESIGN: ---	SHEET: 24	
DRAWN: DJH	PROJECT: 18462.05		
CHECKED: ZAS	DATE: APRIL 2022		

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Appendix E

Bathymetric Survey of Upper Gate Pond

BATHYMETRIC SURVEY

UPPER GATE POND
BARNSTABLE, MASSACHUSETTS

Prepared By:

CR Environmental, Inc.
639 Boxberry Hill Road
East Falmouth, MA 02536

Prepared For:

Epsilon Associates
3 Mill & Main Place, Suite 250
Maynard, MA 01754

November 2022

1.0 INTRODUCTION

CR Environmental Inc. (CR) performed a bathymetric survey of the southwestern half of Upper Gate Pond on November 2, 2022 for Epsilon Associates (Figure 1, Epsilon - Locus Map). The survey was in support of the Cape Cod Gateway Master Plan and proposed placement of fill to construct a taxiway and adjacent safety area for Runway 15-33. The survey was conducted to define the current pond bed surface elevation.

The bathymetric survey was designed as a grid of staff measurements of water depths. Acoustic (echosounder) technology was not feasible due to the shallow water depths and abundant aquatic vegetation which interferes with the acoustic signal. Data processing was reviewed by CR's National Society of Professional Surveyors (NSPS) certified hydrographer

2.0 VESSEL AND NAVIGATION

2.1 Survey Vessel

Survey and sampling operations were conducted using CR's 12-foot aluminum skiff, equipped with an instrument enclosure, custom over-the-side transducer boom and a 6 hp propane outboard engine. Water depths were too shallow and aquatic vegetation too abundant to use the outboard engine, therefore, the skiff was rowed to staff measurement stations on a planned grid.

2.2 Horizontal Positioning

Navigation for the acoustic portion of the survey(s) was accomplished using a Hemisphere VS330 Real-time Kinematic Global Positioning System (RTK GPS) and HYPACK 2015 hydrographic surveying software. The horizontal accuracy of the system is approximately 1.0 centimeter horizontally and 2 centimeters vertically (Root Mean Squared 1-sigma). Horizontal accuracy in

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differential or float mode is approximately 1 foot. RTK corrections were provided via NTRIP internet connection by KeyNetGPS, Inc.

The RTK GPS was serially interfaced to the shipboard computer running HYPACK. This system calculated X,Y positions in the desired grid system (MA State Plane, NAD83, US Foot), recorded the depth and navigation data, and provided a steering display for the boat captain. The survey progress was followed using georeferenced imagery (e.g., orthophotos) as background files, ensuring that the survey area was adequately occupied.

3.0 ACQUISITION AND PROCESSING METHODS

3.1 Bathymetric Methods

The surveyed portion of the pond had abundant floating leaved and emergent aquatic vegetation (Photograph 1). Extensive rhizomes and roots as much as 1 to 1.5 feet or more thick covered the pond bed. Staff measurements of water depth were taken through the root/rhizome masses to the pond bed's mud substrate on a 25 ft x 25-foot grid. A portion of the pond was inaccessible due to water depths too shallow for the skiff and substrate too soft for safe access on foot (Photograph 2).

The water surface elevation was obtained using a Hemisphere S321 RTK GPS system equipped with Carlson SurvPC software. At the time of the survey the water surface elevation was 25.943 feet NAVD88.

Bathymetric data were exported in ASCII comma-delimited point format. A surface (grid) of the survey area was created from the point data using a 5 x 5-foot node density. The surface was blanked along the shoreline of the pond and easterly extent of the data collection to make an accurate surface. Contour maps and GIS layers were prepared from this grid. Layers have been

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delivered in SHP, DXF, ASCII text, GRD and TIF formats all referenced to Mass State Plane, NAD83, US Foot.

Photograph 1. *Rhizomes and roots of water lilies that had floated up from the bottom of Upper Gate Pond*

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Photograph 2. *Peninsula of exposed sediment and vegetation that could not be surveyed at the southern end of Upper Gate Pond (Figure 3)*

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4.0 SURVEY RESULTS

4.1 Bathymetric Conditions

One hundred eighty-two water depth measurements (s1 - s182) and their X, Y coordinates in Mass State Plane, NAD83, US Foot were taken in an approximately 25 x 25-foot grid (Table 1, Figure 2)). No useable professional land surveyors' benchmarks were available to provide vertical control, therefore, CR established a benchmark on a staff at the northwestern access point to Upper Gate Pond. A series of precise measurements were obtained and recorded throughout the survey day from the benchmark to the water's surface. These measurements were later post-processed and confirmed that the water surface elevation remained unchanged throughout the day's survey. Additionally, a series of water surface elevations were taken with a S321 RTK GPS with Carlson SurvPC Software as a check on the water surface elevation readings obtained from the benchmark. The RTK GPS and water surface readings from the CR benchmark resulted in a water surface elevation during the survey of 25.943 feet NAVD88 (+/- 0.1 feet). The pond bed elevations at the 182 staff measurement stations were calculated by subtracting the water depth in feet from the water surface elevation in feet NAVD88 (Table 1).

Staff measured water depths ranged from 0.9 to 6.8 feet. Pond bed elevations in NAVD88 were plotted using 0.5 foot contours (Figure 3) and within the surveyed area ranged from 19.3 feet to 25.2 feet NAVD88. The average pond bed elevation was 23.0 feet NAVD88 (Figure 2).

REFERENCES

U.S. Army Corps of Engineers. 2013. Engineering and Design Hydrographic Surveying. EM1110-2-1003.

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TABLES

TABLE 1
STAFF MEASUREMENT COORDINATES AND WATER DEPTHS AND POND BED ELEVATIONS

NAVD88 Water Surface EL 25.9425 feet

Coordinates: MA State Plane NAD 83 U.S. Foot

Station ID	X	Y	Water Depth (ft)	Pond Bed NAVD88_EL (ft)	Sediment Type at Pond Bottom
S1	988471.21	2707195.12	2.3	23.6425	mud
s2	988457.03	2707214.48	1.6	24.3425	mud
s3	988442.85	2707234.23	1.8	24.1425	mud
s4	988427.56	2707254.01	1.8	24.1425	mud
s5	988410.84	2707273.8	2.5	23.4425	mud
s6	988396.98	2707293.62	1.8	24.1425	mud
s7	988381.09	2707312.04	2.2	23.7425	mud
s8	988364.95	2707332.31	2.1	23.8425	mud
s9	988350.27	2707352.6	3.3	22.6425	mud
s10	988334.05	2707370.06	3.5	22.4425	mud
s11	988319.61	2707390.49	3.2	22.7425	mud
s12	988303.19	2707410.09	3.3	22.6425	mud
s13	988288.66	2707429.08	3.5	22.4425	mud
s14	988272.98	2707449.19	3.5	22.4425	mud
s15	988257.71	2707469.39	2.6	23.3425	mud
s16	988242.05	2707488.62	3.8	22.1425	mud
s17	988224.1	2707510.31	2.6	23.3425	mud
s18	988229.06	2707544.17	3	22.9425	mud
s19	988214.39	2707564.57	1.5	24.4425	mud
s20	988246.86	2707521.74	3.3	22.6425	mud
s21	988261.11	2707504.78	3.2	22.7425	mud
s22	988278.74	2707483.42	3.2	22.7425	mud
s23	988292.32	2707464.94	3.3	22.6425	mud
s24	988307.55	2707446.47	4.5	21.4425	mud
s25	988324.42	2707425.64	3.6	22.3425	mud
s26	988337.6	2707407.46	3.5	22.4425	mud
s27	988353.75	2707386.98	4.1	21.8425	mud
s28	988369.86	2707367.86	3.9	22.0425	mud
s29	988384.9	2707346.87	3.6	22.3425	mud
s30	988401.31	2707328.1	3.7	22.2425	mud
s31	988416.08	2707307.95	3.5	22.4425	mud
s32	988430.66	2707289.48	3.8	22.1425	mud
s33	988446.42	2707268.83	3.8	22.1425	mud
s34	988462.36	2707248.24	3.9	22.0425	mud
s35	988477.86	2707230.51	3.5	22.4425	mud
s36	988492.52	2707210.13	4.1	21.8425	mud
s37	988507.62	2707191.43	3.3	22.6425	mud
s38	988524.37	2707170.89	3.5	22.4425	mud
s39	988540.05	2707150.24	3.7	22.2425	mud

TABLE 1
STAFF MEASUREMENT COORDINATES AND WATER DEPTHS AND POND BED ELEVATIONS

Station ID	X	Y	Water Depth (ft)	Pond Bed NAVD88_EL (ft)	Sediment Type at Pond Bottom
s40	988555.76	2707131.64	4.1	21.8425	mud
s41	988570.19	2707111.98	3.8	22.1425	mud
s42	988586.28	2707092.33	3.5	22.4425	mud
s43	988600.7	2707071.92	3.7	22.2425	mud
s44	988616.94	2707052.83	3.7	22.2425	mud
s45	988632.3	2707033.22	4.3	21.6425	mud
s46	988644.91	2707016.26	1.2	24.7425	mud
s47	988598.98	2707035.87	1.5	24.4425	mud
s48	988612.12	2707016.1	1.2	24.7425	mud
s49	988618.44	2707005.3	1.2	24.7425	mud
s50	988580.11	2707058.31	1.4	24.5425	mud
s51	988565.9	2707077.52	1.7	24.2425	mud
s52	988550.95	2707096.21	1.8	24.1425	mud
s53	988536.93	2707115.39	2.6	23.3425	mud
s54	988519.44	2707136.49	2.3	23.6425	mud
s55	988504.35	2707155.36	2	23.9425	mud
s56	988489.27	2707175.42	3.6	22.3425	mud
s57	988467.83	2707157.42	1.5	24.4425	mud
s57a	988467.61	2707158.05	1.5	24.4425	mud
s58	988484.95	2707139.94	2.2	23.7425	mud
s59	988498.95	2707120.58	2.1	23.8425	mud
s60	988515	2707100.3	1.8	24.1425	mud
s61	988530.57	2707081.56	2	23.9425	mud
s62	988545.75	2707061.3	2.3	23.6425	mud
s63	988560.09	2707040.56	1.7	24.2425	mud
s64	988576.46	2707023.72	1.9	24.0425	mud
s65	988589.91	2707003.53	1.6	24.3425	mud
s66	988556.68	2707003.31	3.4	22.5425	mud
s67	988569.63	2706991.77	1.7	24.2425	mud
s68	988541.74	2707027.12	1.8	24.1425	mud
s69	988525.84	2707047.18	1.9	24.0425	mud
s70	988510.96	2707064.8	3.5	22.4425	mud
s71	988496.56	2707084.5	1.7	24.2425	mud
s72	988480.63	2707104.25	1.6	24.3425	mud
s73	988465.37	2707123.56	1.4	24.5425	mud
s74	988452.54	2707141	0.9	25.0425	mud
s75	988460.79	2707090.86	1.3	24.6425	mud
s76	988476.01	2707069.86	1.4	24.5425	mud
s77	988491.03	2707051.62	1.5	24.4425	mud
s78	988444.71	2707070.16	1	24.9425	mud
s79	988457.15	2707053.5	1.8	24.1425	mud

TABLE 1
STAFF MEASUREMENT COORDINATES AND WATER DEPTHS AND POND BED ELEVATIONS

Station ID	X	Y	Water Depth (ft)	Pond Bed NAVD88_EL (ft)	Sediment Type at Pond Bottom
s80	988470.87	2707035.54	1.4	24.5425	mud
s81	988485.95	2707015.24	1.2	24.7425	mud
s82	988504.99	2706992.32	1.4	24.5425	mud
s83	988518.52	2706974.34	2.7	23.2425	mud
s84	988496.36	2706960.5	1.2	24.7425	mud
s85	988454.66	2707018.3	1.3	24.6425	mud
s86	988442.36	2707010.33	0.6	25.3425	mud
s87	988439.92	2707038.99	0.9	25.0425	mud
s88	988465.38	2707000.14	1	24.9425	mud
s89	988666.8	2707027.05	3.2	22.7425	mud
s90	988652.01	2707050.34	3.5	22.4425	mud
s91	988636.64	2707068.26	3.5	22.4425	mud
s92	988619.16	2707088.28	3.7	22.2425	mud
s93	988604.38	2707108.22	3.6	22.3425	mud
s94	988589.02	2707129.01	3.7	22.2425	mud
s95	988573.64	2707147.91	3.6	22.3425	mud
s96	988560	2707165.67	4	21.9425	mud
s97	988542.14	2707188.43	4.3	21.6425	mud
s98	988527.43	2707207.17	4.1	21.8425	mud
s99	988512.88	2707225.79	4	21.9425	mud
s100	988496.21	2707246.99	3.6	22.3425	mud
s101	988479.1	2707265.09	3.8	22.1425	mud
s102	988465.06	2707284.49	4.2	21.7425	mud
s103	988450.95	2707303.82	3.5	22.4425	mud
s104	988435.15	2707323.44	3.6	22.3425	mud
s105	988420.55	2707341.54	3.9	22.0425	mud
s106	988405.23	2707363.25	3.5	22.4425	mud
s107	988388.84	2707381.69	3.8	22.1425	mud
s108	988373.47	2707401.48	4.2	21.7425	mud
s109	988357.05	2707421.73	3.1	22.8425	mud
s110	988342.64	2707440.63	3.4	22.5425	mud
s111	988326.02	2707460.7	4.6	21.3425	mud
s112	988311.69	2707480.51	3.5	22.4425	mud
s113	988296.41	2707500.86	3.2	22.7425	mud
s114	988281.87	2707520.05	3.6	22.3425	mud
s115	988264.86	2707539.6	6.5	19.4425	mud
s116	988250.85	2707558.97	3.3	22.6425	mud
s117	988235.1	2707577.82	2.7	23.2425	mud
s118	988225.47	2707591.33	2.3	23.6425	mud
s119	988201.01	2707502.89	3.5	22.4425	mud
s120	988211.19	2707526.73	2.5	23.4425	mud

TABLE 1
STAFF MEASUREMENT COORDINATES AND WATER DEPTHS AND POND BED ELEVATIONS

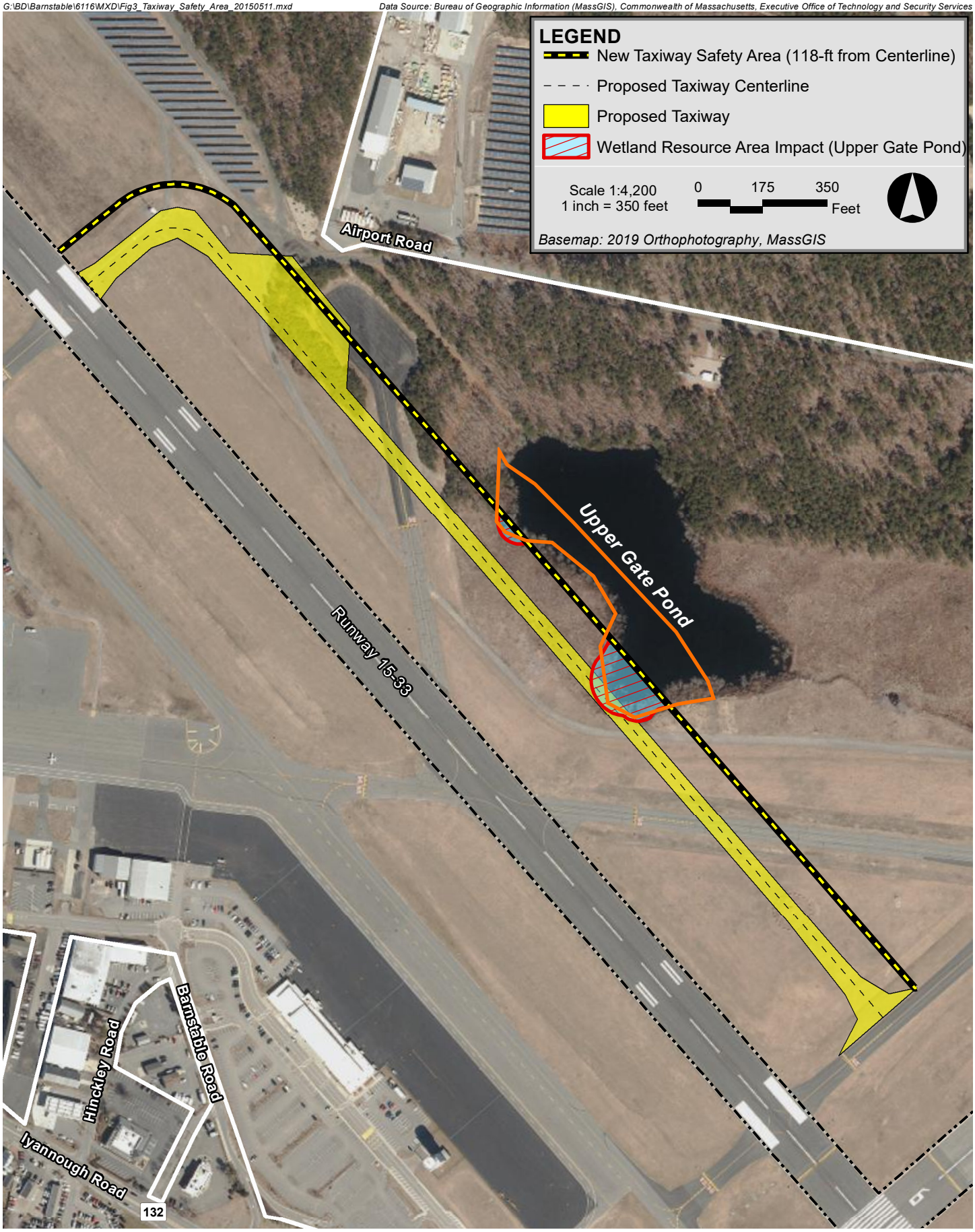
Station ID	X	Y	Water Depth (ft)	Pond Bed NAVD88_EL (ft)	Sediment Type at Pond Bottom
s121	988205.23	2707543.82	2.8	23.1425	mud
s122	988191.72	2707511.49	2.6	23.3425	mud
s123	988175.95	2707532.39	1.5	24.4425	mud
s124	988224.19	2707472.65	3.5	22.4425	mud
s125	988237.92	2707454.46	3.8	22.1425	mud
s126	988251.96	2707434.55	3.2	22.7425	mud
s127	988268.39	2707415.66	3.2	22.7425	mud
s128	988283.11	2707395.34	2.8	23.1425	mud
s129	988298.06	2707375.51	3.4	22.5425	mud
s130	988314.43	2707356.62	3.4	22.5425	mud
s131	988331.72	2707336.69	3.3	22.6425	mud
s132	988313.88	2707323.31	1.8	24.1425	mud
s133	988349.2	2707310.96	2.6	23.3425	mud
s134	988361.4	2707296.39	1.6	24.3425	mud
s135	988354.93	2707290.79	1.3	24.6425	mud
s136	988376.56	2707277.4	1.4	24.5425	mud
s137	988394.58	2707258.99	1.1	24.8425	mud
s138	988415.71	2707241.54	1	24.9425	mud
s139	988430.53	2707222.97	1	24.9425	mud
s140	988444.58	2707203.16	1.3	24.6425	mud
s141	988457.09	2707180.83	1.1	24.8425	mud
s142	988546.7	2707221.53	3.2	22.7425	mud
s143	988562.67	2707202.75	3.5	22.4425	mud
s144	988577.15	2707181.83	6.8	19.1425	mud
s145	988592.68	2707164.4	4.4	21.5425	mud
s146	988607.52	2707145.13	3.9	22.0425	mud
s147	988624.34	2707122.23	2.4	23.5425	mud
s148	988638.65	2707104.16	3.8	22.1425	mud
s149	988654.78	2707083.8	3.9	22.0425	mud
s150	988670.99	2707063.65	3.6	22.3425	mud
s151	988686.54	2707043.1	3.3	22.6425	mud
s152	988701.82	2707023.07	3	22.9425	mud
s153	988706.25	2707014.53	1.2	24.7425	mud
s154	988533.85	2707240.91	3.4	22.5425	mud
s155	988518.54	2707261.08	3.6	22.3425	mud
s156	988501.92	2707281.6	3.6	22.3425	mud
s157	988485.89	2707300.15	4.1	21.8425	mud
s158	988471.01	2707320.03	3.6	22.3425	mud
s159	988456.09	2707339.98	3.6	22.3425	mud
s160	988441.02	2707360.71	3.7	22.2425	mud
s161	988425.46	2707378.55	4	21.9425	mud

TABLE 1
STAFF MEASUREMENT COORDINATES AND WATER DEPTHS AND POND BED ELEVATIONS

Station ID	X	Y	Water Depth (ft)	Pond Bed NAVD88_EL (ft)	Sediment Type at Pond Bottom
s162	988409.15	2707397.92	4	21.9425	mud
s163	988395.08	2707417.57	4	21.9425	mud
s164	988377.71	2707437.6	3.6	22.3425	mud
s165	988362.56	2707456.3	2.5	23.4425	mud
s166	988347.46	2707476.36	3.5	22.4425	mud
s167	988332.25	2707495.25	3.1	22.8425	mud
s168	988316.01	2707515.37	3.3	22.6425	mud
s169	988299.32	2707535.03	3.7	22.2425	mud
s170	988285.09	2707554.72	3	22.9425	mud
s171	988268.62	2707574.19	2.9	23.0425	mud
s172	988258.14	2707590.83	1.2	24.7425	mud
s173	988200.43	2707467.52	2.9	23.0425	mud
s174	988233.16	2707423.58	3.6	22.3425	mud
s175	988245.78	2707408.64	2.3	23.6425	mud
s176	988263.16	2707382.48	1.7	24.2425	mud
s177	988278.61	2707362.78	3.1	22.8425	mud
s178	988292.71	2707341.76	0.9	25.0425	mud
s179	988199.98	2707582.53	1	24.9425	mud
s180	988188.39	2707597.04	0.9	25.0425	mud
s181	988171.5	2707588.45	1.4	24.5425	peat
s182	988188.69	2707575.95	1.1	24.8425	peat

FIGURES

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

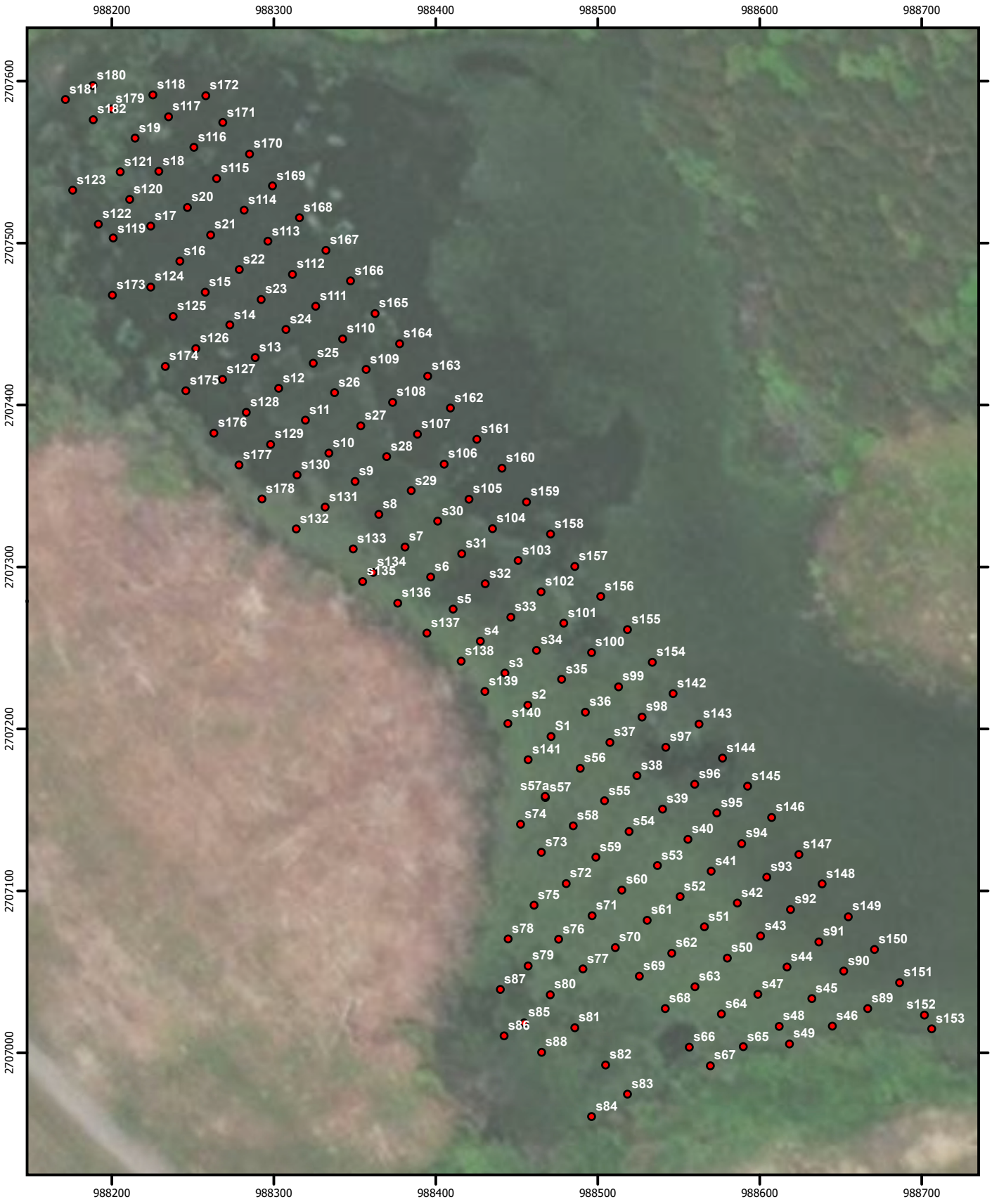


Cape Cod Gateway Airport Master Plan Environmental Assessment Barnstable, Massachusetts

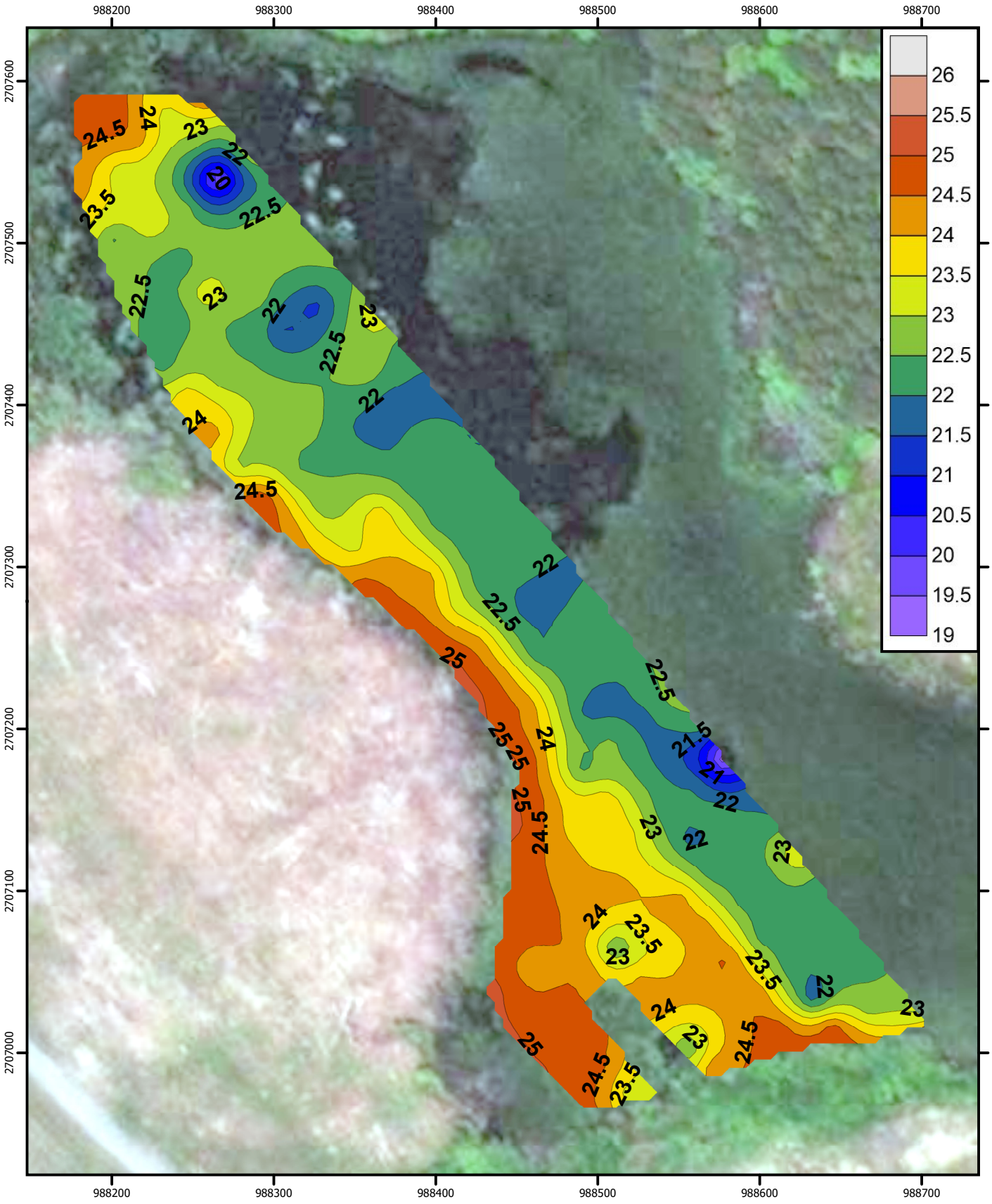
Epsilon ASSOCIATES INC.

Figure 1

New Taxiway and Safety Area Wetland Resource Impacts



CR www.crenvironmental.com	Upper Gate Pond Staff Locations Cape Cod Gateway Airport Barnstable, MA	N W E S
	NOTES: 1) Grid MA State Plane NAD 83 US Feet 2) Survey was conducted 11/2/2022 3) A total of 182 staff measurements were obtained 4) Staff measurements were taken based on a 25 X 25 ft grid Feet: 0, 50, 100	Figure 2



Upper Gate Pond Bathymetry NAVD88
0.5 Foot Contour Intervals
Cape Cod Gateway Airport, Barnstable, MA

N
W E
S

www.crenvironmental.com

NOTES:
1) Grid MA State Plane NAD 83 US Feet
2) Survey was conducted 11/2/2022
3) A total of 182 staff measurements were obtained to make this surface
4) Staff measurements were taken on a 25 X 25 ft grid

Feet
0 50 100

Figure 3

Appendix F

Airport NPDES ID MAR 053164 Permit

NPDES FORM 3510-6	EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NOTICE OF INTENT (NOI) FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY UNDER THE NPDES MULTI-SECTOR GENERAL PERMIT	FORM Approved OMB No. 2040-0004

Permit Information

Master Permit Number: MAR050000

NPDES ID: MAR053164

Eligibility Information

State/territory where your facility is discharging: MA

Does your facility discharge to federally recognized Indian Country lands? No

Are you a *"Federal Operator"* as defined in Appendix A (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_a_-_definitions.pdf)?

No

Which type of form would you like to submit? Notice of Intent (NOI)

By indicating "Yes" below, I confirm that I understand that the MSGP only authorizes the stormwater discharges in Part 1.1.2 and the allowable non-stormwater discharges listed in Part 1.2.2. Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), during an inspection, etc. If any discharges requiring NPDES permit coverage other than the allowable stormwater and non-stormwater discharges listed in Parts 1.2.1. and 1.2.2. will be discharged, they must be covered under another NPDES permit.

Yes

Are you a new discharger or a new source as defined in Appendix A (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_a_-_definitions.pdf)?

No

- **Have stormwater discharges from your facility been covered previously under an NPDES permit?** Yes
  - **If yes, provide your most current NPDES ID (i.e., permit tracking number) if you had coverage under EPA's MSGP or the NPDES permit number if you had coverage under an EPA individual permit:**

    MAR053164
- **Are you discharging to any waters of the U.S. that are designated by the state or tribal authority under its antidegradation policy as a Tier 3 water (Outstanding National Resource water)? (See Appendix L (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_l_-_list_of_tier_3_tier_2_and_tier_2.5_waters.pdf))**

  No

What is the legal name of the Operator as defined in Appendix A (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_a_-_definitions.pdf)?

Cape Cod Gateway Airport

What is the name of your facility or activity as defined in Appendix A (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_a_-_definitions.pdf)?

CAPE COD GATEWAY AIRPORT

Operator Information

Operator Information

Operator Name: Cape Cod Gateway Airport

Operator Mailing Address

Address Line 1: 480 Barnstable Road

Address Line 2:

City: Hyannis

ZIP/Postal Code: 02601

State: MA

County or Similar Division: Barnstable

Operator Point of Contact Information

First Name Middle Initial Last Name: Katie Servis

Title: Airport Manager

Phone: 5087752020 **Ext.:**

Email: kservis@flyhya.com

NOI Preparer Information

☑ **This NOI is being prepared by someone other than the certifier.**

First Name Middle Initial Last Name: Josephine Ibanez

Organization: Horsley Witten Group, Inc.

Phone: 508-833-6600 **Ext.:**

Email: jibanez@horsleywitten.com

Facility Information

Facility Information

Facility Name: CAPE COD GATEWAY AIRPORT

Facility Address

Address Line 1: 480 BARNSTABLE ROAD

Address Line 2:

City: HYANNIS

ZIP/Postal Code: 02601

State: MA

County or Similar Division: Barnstable

Latitude/Longitude for the Facility

Latitude/Longitude: 41.6666°N, 70.2859°W

Latitude/Longitude Data Source: Map

Horizontal Reference Datum: NAD 83

General Facility Information

What is the ownership type of the facility? Municipality

Estimated area of industrial activity at your facility exposed to stormwater (rounded to the nearest quarter acre): 645

Is your facility presently inactive and unstaffed? No

Exception for Inactive and Unstaffed Facilities: The requirement for indicator monitoring, impaired waters monitoring, and/or benchmark monitoring does not apply at a facility that is inactive and unstaffed, as long as there are no industrial materials or activities exposed to stormwater.

If circumstances change during the permit term that affect your qualifications for this exception to monitoring requirements (i.e. industrial materials or activities exposure to stormwater or your facility's active/inactive and staffed/unstaffed status) you must submit a NOI notifying EPA of the change in circumstances.

Sector-Specific Information

Primary Sector: S **Primary Subsector:** S1

Primary SIC Code: 4581

If you are a Sector S (Air Transportation) facility, do you anticipate using more than 100,000 gallons of pure glycol in glycol-based deicing fluids and/or 100 tons or more of urea on an average annual basis?

No

Discharge Information

By indicating "Yes" below, I confirm that I understand that the MSGP only authorizes the stormwater discharges in Part 1.2.1 and the allowable non-stormwater discharges listed in Part 1.2.2. Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), during an inspection, etc. If any discharges requiring NPDES permit coverage other than the authorized stormwater and non-stormwater discharges listed in Parts 1.2.1 and 1.2.2 will be discharged, they must be covered under another NPDES permit.

Yes

Federal Effluent Limitation Guidelines

Identify the Effluent Limitation Guideline(s) that apply to your stormwater discharges.

40 CFR Part/Subpart	Eligible Discharges	Affected MSGP Sector	New Source Date	Applicability
Part 449	Existing and new primary airports with1,000 or more annual jet departures that discharge wastewater associated with airfield pavement deicing that contains urea commingled with stormwater	S	06/15/2012	**Does your facility have any discharges subject to this effluent limitation guideline?** No

Are you requesting permit coverage for any stormwater discharges subject to effluent limitation guidelines? No

Other Discharge Information

Does your facility discharge into a Municipal Separate Sewer System (MS4)? No

Receiving Waters Information

List all of the stormwater discharge points from your facility.

Discharge Point 00A: Outfall A

Applicable Sectors

Select the Sectors/Subsector(s) that apply to this discharge point.

	Sector	Subsector	SIC/Activity Code
☑	**S** - AIR TRANSPORTATION FACILITIES	**S1** - Air Transportation Facilities	4581

Latitude/Longitude: 41.6713°N, 70.2847°W

☐ **This discharge point is *Substantially Identical* to an existing discharge point.**

Receiving Water

GNIS Name: n/a

Waterbody Name: Upper Gate Pond

Listed Water ID: n/a

Is this receiving water saltwater or freshwater? Freshwater

Is this receiving water designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water)?

No

Will you have stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit?

No

Benchmark Monitoring

Are you subject to benchmark monitoring requirements for a hardness-dependent metal? No

Impaired Waters Monitoring

NOTE: The information automatically populated in this section for determining if the receiving water is listed as impaired on the 303(d) list and in need of a TMDL, the cause(s) of the impairment if the receiving water is impaired on the CWA 303(d) list, if a TMDL has been completed for the receiving waterbody, and the TMDL ID and pollutants for which there is a TMDL may be outdated and inaccurate. It is recommended that you consult with your state's guidance for discharges into impaired waters to determine the correct pollutants and TMDLS and update the causes for the impairment and TMDL information accordingly.

Massachusetts Impaired Waters (IW) information and required monitoring parameters available at:

https://www.mass.gov/lists/integrated-lists-of-waters-related-reports (https://www.mass.gov/lists/integrated-lists-of-waters-related-reports)

https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf (https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf)

Where the Massachusetts monitoring guidance identifies one or more monitoring parameters that are different than the identified pollutant causing the impairment, indicate the monitoring parameter(s) as the pollutant(s) causing the impairment in the table below (select Yes for "Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL?" to display the pollutant table). Where the monitoring guidance indicates No Monitoring Required "NMR" for the pollutant causing the impairment, do not add a Cause of Impairment Group/Pollutant and delete any that were automatically populated in the table.

Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? No

Has a TMDL been completed for this receiving waterbody? No

Discharge Point 00B: Outfall B

Applicable Sectors

Select the Sectors/Subsector(s) that apply to this discharge point.

	Sector	Subsector	SIC/Activity Code
☑	**S** - AIR TRANSPORTATION FACILITIES	**S1** - Air Transportation Facilities	4581

Latitude/Longitude: 41.6693°N, 70.2837°W

☐ **This discharge point is *Substantially Identical* to an existing discharge point.**

Receiving Water

GNIS Name:
n/a

Waterbody Name:
Upper Gate Pond

Listed Water ID:
n/a

Is this receiving water saltwater or freshwater? Freshwater

Is this receiving water designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water)?

No

Will you have stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit?

No

Benchmark Monitoring

Are you subject to benchmark monitoring requirements for a hardness-dependent metal? No

Impaired Waters Monitoring

NOTE: The information automatically populated in this section for determining if the receiving water is listed as impaired on the 303(d) list and in need of a TMDL, the cause(s) of the impairment if the receiving water is impaired on the CWA 303(d) list, if a TMDL has been completed for the receiving waterbody, and the TMDL ID and pollutants for which there is a TMDL may be outdated and inaccurate. It is recommended that you consult with your state's guidance for discharges into impaired waters to determine the correct pollutants and TMDLS and update the causes for the impairment and TMDL information accordingly.

Massachusetts Impaired Waters (IW) information and required monitoring parameters available at:

https://www.mass.gov/lists/integrated-lists-of-waters-related-reports (https://www.mass.gov/lists/integrated-lists-of-waters-related-reports)

https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf
(https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf)

Where the Massachusetts monitoring guidance identifies one or more monitoring parameters that are different than the identified pollutant causing the impairment, indicate the monitoring parameter(s) as the pollutant(s) causing the impairment in the table below (select Yes for "Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL?" to display the pollutant table). Where the monitoring guidance indicates No Monitoring Required "NMR" for the pollutant causing the impairment, do not add a Cause of Impairment Group/Pollutant and delete any that were automatically populated in the table.

Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? No

Has a TMDL been completed for this receiving waterbody? No

Discharge Point 00C: Outfall C

Applicable Sectors

Select the Sectors/Subsector(s) that apply to this discharge point.

	Sector	Subsector	SIC/Activity Code
☑	**S** - AIR TRANSPORTATION FACILITIES	**S1** - Air Transportation Facilities	4581

Latitude/Longitude: 41.6695°N, 70.2834°W

☐ **This discharge point is *Substantially Identical* to an existing discharge point.**

Receiving Water

GNIS Name: n/a

Waterbody Name: Upper Gate Pond

Listed Water ID: n/a

Is this receiving water saltwater or freshwater? Freshwater

Is this receiving water designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water)?

No

Will you have stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit?

No

Benchmark Monitoring

Are you subject to benchmark monitoring requirements for a hardness-dependent metal? No

Impaired Waters Monitoring

NOTE: The information automatically populated in this section for determining if the receiving water is listed as impaired on the 303(d) list and in need of a TMDL, the cause(s) of the impairment if the receiving water is impaired on the CWA 303(d) list, if a TMDL has been completed for the receiving waterbody, and the TMDL ID and pollutants for which there is a TMDL may be outdated and inaccurate. It is recommended that you consult with your state's guidance for discharges into impaired waters to determine the correct pollutants and TMDLS and update the causes for the impairment and TMDL information accordingly.

Massachusetts Impaired Waters (IW) information and required monitoring parameters available at:

https://www.mass.gov/lists/integrated-lists-of-waters-related-reports (https://www.mass.gov/lists/integrated-lists-of-waters-related-reports)

https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf (https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf)

Where the Massachusetts monitoring guidance identifies one or more monitoring parameters that are different than the identified pollutant causing the impairment, indicate the monitoring parameter(s) as the pollutant(s) causing the impairment in the table below (select Yes for "Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL?" to display the pollutant table). Where the monitoring

guidance indicates No Monitoring Required "NMR" for the pollutant causing the impairment, do not add a Cause of Impairment Group/Pollutant and delete any that were automatically populated in the table.

Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? No

Has a TMDL been completed for this receiving waterbody? No

Discharge Point 00D: Outfall D

Applicable Sectors

Select the Sectors/Subsector(s) that apply to this discharge point.

	Sector	Subsector	SIC/Activity Code
☑	**S** - AIR TRANSPORTATION FACILITIES	**S1** - Air Transportation Facilities	4581

Latitude/Longitude: 41.6697°N, 70.279°W

☐ **This discharge point is *Substantially Identical* to an existing discharge point.**

Receiving Water

GNIS Name: n/a

Waterbody Name: Lewis Pond

Listed Water ID: n/a

Is this receiving water saltwater or freshwater? Freshwater

Is this receiving water designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water)?

No

Will you have stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit?

No

Benchmark Monitoring

Are you subject to benchmark monitoring requirements for a hardness-dependent metal? No

Impaired Waters Monitoring

NOTE: The information automatically populated in this section for determining if the receiving water is listed as impaired on the 303(d) list and in need of a TMDL, the cause(s) of the impairment if the receiving water is impaired on the CWA 303(d) list, if a TMDL has been completed for the receiving waterbody, and the TMDL ID and pollutants for which there is a TMDL may be outdated and inaccurate. It is recommended that you consult with your state's guidance for discharges into impaired waters to determine the correct pollutants and TMDLS and update the causes for the impairment and TMDL information accordingly.

Massachusetts Impaired Waters (IW) information and required monitoring parameters available at:

https://www.mass.gov/lists/integrated-lists-of-waters-related-reports (https://www.mass.gov/lists/integrated-lists-of-waters-related-reports)

https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf (https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf)

Where the Massachusetts monitoring guidance identifies one or more monitoring parameters that are different than the identified pollutant causing the impairment, indicate the monitoring parameter(s) as the pollutant(s) causing the impairment in the table below (select Yes for "Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL?" to display the pollutant table). Where the monitoring guidance indicates No Monitoring Required "NMR" for the pollutant causing the impairment, do not add a Cause of Impairment Group/Pollutant and delete any that were automatically populated in the table.

Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? No

Has a TMDL been completed for this receiving waterbody? No

SWPPP Information

Has the SWPPP been prepared in advance of filing this NOI, as required? Yes

SWPPP Contact Information:

First Name Middle Initial Last Name: Katie Servis

Phone: 5087752020 **Ext.:**

Email: katie.servis@town.barnstable.ma.us

SWPPP Availability:

Your current SWPPP or certain information from your SWPPP must be made available through one of the following three options. Select one of the options and provide the required information.

Note: you are not required to post any confidential business information (CBI) or restricted information (as defined in Appendix A (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_a_-_definitions.pdf)) (such information may be redacted), but you must clearly identify those portions of the SWPPP that are being withheld from public access.

☐ **Option 1: Attach a current copy of your SWPPP to this NOI.**

☐ **Option 2: Maintain a Current Copy of your SWPPP on an Internet page (Universal Resource Locator or URL).**

☑ **Option 3: Provide the following information from your SWPPP:**

A. Describe your onsite industrial activities exposed to stormwater and potential spill and leak areas.

e.g., material storage; equipment fueling, maintenance, and cleaning; cutting steel beams

Industrial activities exposed to stormwater include:- vehicle and aircraft operation, storage, and maintenance, fuel storage and transfer between on-site storage facilities, fuel delivery vehicles, mobile refuelers, aircraft, and ground support vehicles- deicing and washing of aircraft at designated deicing locations where residual deicing fluid and washwater is collected and discharged to a wastewater treatment facility- winter maintenance of pavement utilizing Federal Aviation Administration (FAA) approved sand

B. List the pollutants(s) or pollutant constituent(s) associated with each industrial activity exposed to stormwater that could be discharged in stormwater and/or in any authorized non-stormwater discharges listed in Part 1.1.3.

Vehicle and aircraft operation, storage, and maintenance - oil and grease, gasoline, aviation fuels, antifreeze, waste oilAircraft deicing and washing - propylene glycol, oil and grease, aviation fuel residuals, antifreeze, metalsWinter maintenance of pavement - suspended solids

C. Describe the control measures you will employ to comply with the non-numeric technology-based effluent limits required in Part 2.1.2 and Part 8, and any other measures taken to comply with the requirements in Part 2.2 Water Quality-Based Effluent Limitations (see Part 5.2.4).

Minimize exposure - storage of fuel, oil, and maintenance products, and waste products, is prohibited in areas exposed to stormwater. Deicing and aircraft washing is only allowed in designated areas where residual deicing fluid and washwater are collected and discharge to a wastewater treatment facility. Spill kits and containment measures are stationed at fuel transfer locations, and all fuel deliveries to the Airport fuel farm are monitored by Airport personnel. 100% of stormwater discharged to Upper Gate and Lewis Ponds is treated by a Vortechs hydronamic separator achieving greater than 80% total suspended solids removal prior to discharge. The Airport has implemented a Spill Prevention Control and Countermeasure (SPCC) Plan, and a Zero Discharge Policy that prohibits any discharge of vehicle or aircraft washwater to areas exposed to stormwater or areas that discharge to the facility stormwater system.

D. Provide a schedule for good housekeeping and maintenance (see Part 5.2.5.1) and a schedule for all inspections required in Part 4 (see Part 5.2.5.2).

Mobile refuelers and fuel storage facilities are inspected by the operator on a daily basis for any deficiencies and are removed from service if any deficiencies are observed. Good housekeeping measures are intended to be consistently implemented by the Airport and tenant operators on a daily basis. Discharge monitoring will be conducted by Airport personnel on a quarterly basis, and monthly during the deicing season (variable, typically November through March). Routine facility inspections will be conducted by Airport personnel on a quarterly basis, or more frequently to address any areas of significant activity (i.e., during airfield construction projects). At least one routine facility inspection per year will be conducted during a period when stormwater discharge is occuring. Maintenance of stormwater structures (i.e., sediment and debris removal) is conducted during the spring, and on a more frequent basis as necessary based on visual inspection of the stormwater structures.

Endangered Species Protection Worksheet: Criterion C1

The following questions will help you determine your eligibility under Part 1.1.4 of the permit with respect to protection of Endangered Species Act (ESA) species and critical habitat(s). Please refer to Appendix E (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_e_-_procedures_relating_to_endangered_species_protection.pdf) of the 2021 MSGP for important information regarding your obligations under this permit concerning ESA-protected species and critical habitat(s).

Determine ESA Eligibility Criterion

Are your industrial activities already addressed in another operator's valid certification of eligibility for your "action area" under eligibility criteria A, C, D, or E of the 2021 MSGP?

No

Are your industrial activities the subject of a permit under section 10 of the ESA by the USFWS and/or NMFS, and this authorization addresses the effects of your facility's discharges and discharge-related activities on ESA-listed species and critical habitat?

No

You must determine whether species listed as either threatened or endangered under the Endangered Species Act, and/or their critical habitat are located in your facility's action area. ESA-listed species and critical habitat are under the purview of the NMFS and the USFWS.

Determine Your Action Area

Your "action area" (as defined in Appendix A (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_a_-_definitions.pdf)) includes all areas to be affected directly or indirectly by the action and not merely the immediate area involved in the action, including areas beyond the footprint of the facility that are likely to be affected by stormwater discharges, discharge-related activities, and authorized non-stormwater discharges. You must select and confirm that all the following are true:

- **In determining my "action area", I have considered that discharges of pollutants into downstream areas can expand the action area well beyond the footprint of my facility and the discharge point(s). I have taken into account the controls I will be implementing to minimize pollutants and the receiving waterbody characteristics (e.g. perennial, intermittent, ephemeral) in determining the extent of physical, chemical, and/or biotic effects of the discharges. I confirm that all receiving waterbodies that could receive pollutants from my facility are included in my action area.**

  True

- **In determining my "action area", I have considered that discharge-related activities must also be accounted for in determining my action area. I understand that discharge-related activities are any activities that cause, contribute to, or result in stormwater and authorized non-stormwater point source discharges, and measures such as the siting, construction, and operation of stormwater controls to control, reduce, or prevent pollutants from being discharged. I understand that any new or modified stormwater controls that will have noise or other similar effects, and any disturbances associated with construction of controls, are part of my action area.**

  True

Provide a written description of your action area and explain your rationale for the extent of the action area drawn on your map. Click here for an example.

The action area for the Cape Cod Gateway Airport's stormwater discharges extends from the facility to the discharge points located at Lewis Pond and Upper Gate Pond. The limit of the action area reflects the approximate distance at which the discharge and any pollutants would be expected to cause potential adverse effects to ESA-listed species and/or critical habitat because Lewis Pond and Upper Gate Pond are the only receiving waterbodies. The action area does not extend beyond these ponds, since there are no other direct hydrologic connections.

Attach a map of the action area for your facility. Mapping tool IPaC (the Information, Planning, and Consultation System) located at http://ecos.fws.gov/ipac/ (https://ecos.fws.gov/ipac/) or click here (/net-msgp/documents/action_area_example.pdf) for an example.

Name	Uploaded Date	Size
2021_Drainage Plan Layout.pdf (attachment/715527)	05/26/2021	4.10 MB

Determine if ESA-listed species and/or critical habitat are in your facility's action area.

ESA-listed species and critical habitat are under the purview of the NMFS and the USFWS, and in many cases, you will need to acquire species and critical habitat lists from both federal agencies.

National Marine Fisheries Service (NMFS)

To obtain NMFS-listed species and critical habitat information, use the resources listed below:

General Resources:

- NOAA Fisheries, Regions Page (https://www.fisheries.noaa.gov/regions)

For the Northeastern U.S.:

- NOAA Fisheries Greater Atlantic Region ESA Section 7 Mapper (https://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=1bc332edc5204e03b250ac11f9914a27)

For Puerto Rico:

- *Acropora* critical habitat map (https://www.fisheries.noaa.gov/resource/map/acropora-elkhorn-and-staghorn-coral-critical-habitat-map-and-gis-data)
- Green turtle critical habitat map (https://www.fisheries.noaa.gov/resource/map/green-turtle-critical-habitat-map-and-gis-data)
- Hawksbill Turtle critical habitat map (https://www.fisheries.noaa.gov/resource/map/hawksbill-turtle-critical-habitat-map-and-gis-data)

Western U.S.:

- West Coast Region Protected Resources App (https://www.webapps.nwfsc.noaa.gov/portal/apps/webappviewer/index.html?id=7514c715b8594944a6e468dd25aaacc9)

Pacific Islands:

- Contact the Pacific Islands Regional Office at (808) 725-5000 or pirohonolulu@noaa.gov (mailto:pirohonolulu@noaa.gov)

I have checked the webpages listed above and confirmed that: There are no NMFS-listed species and/or critical habitat in my action area.

U.S. Fish and Wildlife Service (USFWS)

To obtain FWS-listed species and critical habitat information, use the resources listed below:

- IPaC (the Information, Planning, and Consultation System) (https://ecos.fws.gov/ipac/)
- For instructions for using IPaC, click here.

I have checked the webpages listed above and confirmed that: There are FWS-listed species and/or critical habitat in my action area.

For FWS species, include the full printout from your IPaC query/Official Species List.

Name	Uploaded Date	Size
Species List_ New England Ecological Services Field Office.pdf (attachment/715517)	05/26/2021	194.57 KB

You may be eligible under **Criterion C.** You must assess whether your discharges and discharge-related activities are likely to adversely affect ESA-listed species or critical habitat, and whether any additional measures are necessary to ensure no likely adverse effects. In order to make a determination of your facility's likelihood of adverse effects, you must complete the Criterion C Eligibility fields below.

Criterion C Eligibility

Select which applies:

Criterion C1: Facility eligible for Criterion C in the 2015 MSGP with no change to ESA-listed species, critical habitat, or action area.

Your facility was eligible for Criterion C in the 2015 MSGP and there has been no change in your facility's action area and you have confirmed that there are no additional ESA-listed species or critical habitat under the jurisdiction of USFWS and/or NMFS in your action area since your certification under Criterion C in the 2015 MSGP. You must provide a description of the basis of this criterion selected on your NOI form and provide documentation supporting your eligibility determination in your SWPPP.

Select which applies:

I am seeking coverage under the MSGP as an existing discharger and my facility has modifications to its discharge characteristics (e.g., changes in discharge flow or area drained, different pollutants) and/or discharge-related activities (e.g., stormwater controls).

Provide a basis statement providing the USFWS and/or NMFS resources consulted that helped you determine that there are no additional ESA-listed species and/or critical habitat have been listed by under the jurisdiction of the Services in your action area.

Based on a review of information provided by the National Marine Fisheries Service (NMFS) and using the NOAA Fisheries Greater Atlantic Region ESA Section 7 Mapper, there are no listed threatened or endangered species or critical habitat in the designated action area. Based on a listed threatened and endangered species and critical habitat information request completed in the U.S. Fish and Wildlife Information, Planning, and Coordination (IPaC) system, there is one threatened species and one endangered species listed and no critical habitat designated for the action area. The Northern Long-eared Bat is listed as threatened and the American Chaffseed is listed as endangered. Slight drainage modifications were made to areas near the East Ramp of the Airport. All drainage changes made in 2021 did not result in any additional stormwater directed towards Lewis Pond or Upper Gate Pond.

Note: Any missing or incomplete information in this section may result in a delay of your coverage under the permit.

Historic Preservation: Criterion A

The following questions will help you determine your eligibility under Part 1.1.5 of the permit with respect to preservation of historic properties. You may still use the paper instructions in Appendix F (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_f_-_procedures_relating_to_historic_properties_preservation.pdf) of the MSGP in advance or in conjunction with answering the questions in this section of the form. For more information about your State Historic Preservation Office (SHPO) or Tribal Historic Preservation Office (THPO), please visit the National Park Service (NPS) websites at:

- **State Historic Preservation Office (SHPO) (https://www.nps.gov/subjects/nationalregister/state-historic-preservation-offices.htm)**
- **Tribal Historic Preservation Office (THPO) (https://www.nps.gov/history/tribes/Tribal_Historic_Preservation_Officers_Program.htm)**

Are you an existing facility that is resubmitting for certification under the 2021 MSGP? Yes

If you are an existing facility you should have already addressed National Historic Preservation Act (NHPA) issues. To gain coverage under the 2015 MSGP, you were required to certify that you were either not affecting historic properties or had obtained written agreement from the relevant SHPO or THPO regarding methods of mitigating potential impacts.

Will you be constructing or installing any new stormwater control measures? No

You are eligible under **Criterion A**

Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Signing an electronic document on behalf of another person is subject to criminal, civil, administrative, or other lawful action.

Certified By: Matthew T. Elia

Certifier Title: Assistant Airport Manager

Certifier Email: melia@flyhya.com

Certified On: 05/27/2021 1:39 PM ET

Appendix G

RMAT Documentation

Climate Resilience Design Standards Tool Project Report

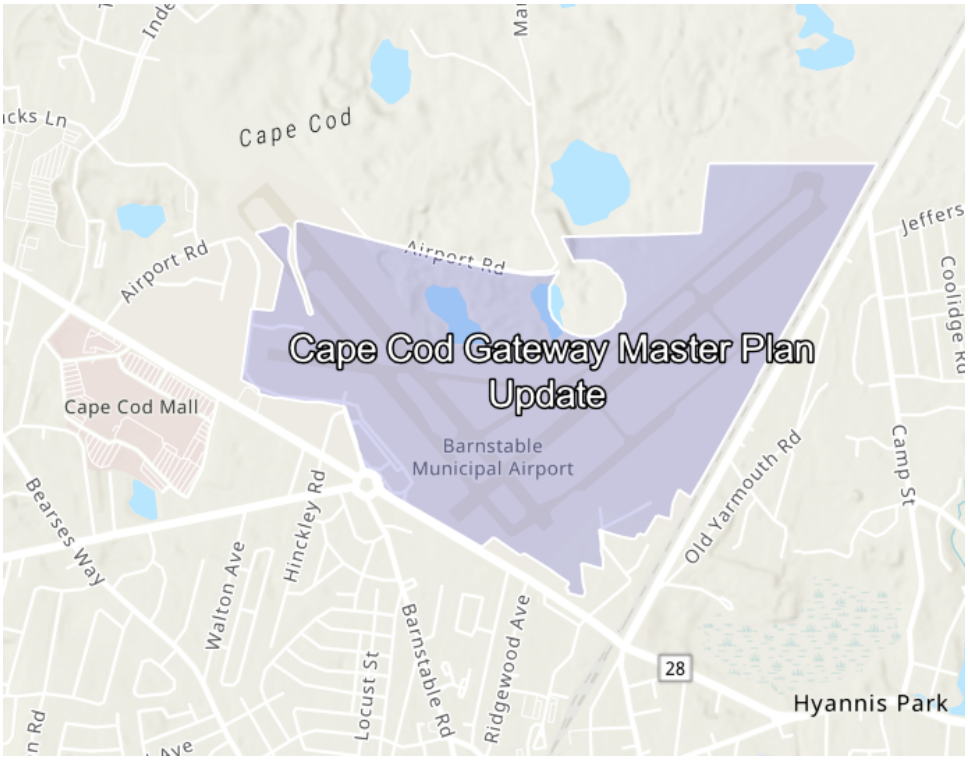
Cape Cod Gateway Master Plan Update
Date Created: 6/1/2022 3:40:46 PM
Created By: rdibenedetto@epsilonassociates.com
Date Report Generated: 9/27/2022 10:26:19 AM
Tool Version: Version 1.2
Project Contact Information: Katie Servis (kservis@flyhya.com)

Project Summary

Link to Project

Estimated Capital Cost: $111000000.00
End of Useful Life Year: 2092
Project within mapped Environmental Justice neighborhood: No

Ecosystem Service Benefits	Scores
Project Score	High
Exposure	**Scores**
Sea Level Rise/Storm Surge	Not Exposed
Extreme Precipitation - Urban Flooding	High Exposure
Extreme Precipitation - Riverine Flooding	High Exposure
Extreme Heat	High Exposure



Asset Preliminary Climate Risk Rating Summary

Number of Assets: 4

Asset Risk	Sea Level Rise/Storm Surge	Extreme Precipitation - Urban Flooding	Extreme Precipitation - Riverine Flooding	Extreme Heat
Terminal Building	Low Risk	High Risk	High Risk	High Risk
Runways and Taxiways	Low Risk	High Risk	High Risk	High Risk
Hangar Development Areas	Low Risk	High Risk	High Risk	High Risk
Forested Area	—— Natural Resource project assets do not receive a preliminary climate risk rating. ——			

Climate Resilience Design Standards Summary

	Target Planning Horizon	Intermediate Planning Horizon	Percentile	Return Period	Tier
Sea Level Rise/Storm Surge					
Terminal Building					
Runways and Taxiways					
Hangar Development Areas					
Forested Area					
Extreme Precipitation					
Terminal Building	2070			100-yr (1%)	Tier 3
Runways and Taxiways	2050			10-yr (10%)	Tier 2

Hangar Development Areas	2070		25-yr (4%)	Tier 2
Forested Area	2030			Tier 1
Extreme Heat				
Terminal Building	2070	90th		Tier 3
Runways and Taxiways	2050	50th		Tier 2
Hangar Development Areas	2070	50th		Tier 2
Forested Area	2030	50th		Tier 1

Scoring Rationale - Project Exposure Score

The purpose of the Exposure Score output is to provide a preliminary assessment of whether the overall project site and subsequent assets are exposed to impacts of natural hazard events and/or future impacts of climate change. For each climate parameter, the Tool will calculate one of the following exposure ratings: Not Exposed, Low Exposure, Moderate Exposure, or High Exposure. The rationale behind the exposure rating is provided below.

Sea Level Rise/Storm Surge

This project received a "Not Exposed" because of the following:

- Not located within the predicted mean high water shoreline by 2030
- No historic coastal flooding at project site
- Not located within the Massachusetts Coast Flood Risk Model (MC-FRM)

Extreme Precipitation - Urban Flooding

This project received a "High Exposure" because of the following:

- Increased impervious area
- Maximum annual daily rainfall exceeds 10 inches within the overall project's useful life
- No historic flooding at project site
- Existing impervious area of the project site is between 10% and 50%

Extreme Precipitation - Riverine Flooding

This project received a "High Exposure" because of the following:

- Part of the project is within a mapped FEMA floodplain, outside of the Massachusetts Coast Flood Risk Model (MC-FRM)
- Part of the project is within 100ft of a waterbody
- Project is potentially susceptible to riverine erosion
- No historic riverine flooding at project site

Extreme Heat

This project received a "High Exposure" because of the following:

- Increased impervious area
- Existing trees are being removed as part of the proposed project
- Existing impervious area of the project site is between 10% and 50%
- 10 to 30 day increase in days over 90 deg. F within project's useful life
- Located within 100 ft of existing water body

Scoring Rationale - Asset Preliminary Climate Risk Rating

A Preliminary Climate Risk Rating is determined for each infrastructure and building asset by considering the overall project Exposure Score and responses to Step 4 questions provided by the user in the Tool. Natural Resource assets do not receive a risk rating. The following factors are what influenced the risk ratings for each asset.

Asset - Terminal Building
Primary asset criticality factors influencing risk ratings for this asset:

- Asset may inaccessible/inoperable during natural hazard event, but must be accessible/operable within one day after natural hazard event
- Greater than 10,000 people would be directly affected by the loss/inoperability of the asset

- Some alternative programs and/or services are available to support the community
- Cost to replace is between $30 million and $100 million
- Spills and/or releases of hazardous materials would be relatively easy to clean up

Asset - Runways and Taxiways
Primary asset criticality factors influencing risk ratings for this asset:

- Asset can be inaccessible/inoperable more than a week after natural hazard event without consequences
- Loss/inoperability of the asset would have impacts limited to the location of infrastructure only
- Inoperability of the asset would be expected to cause a loss of confidence in government agency
- Inoperability may moderately impact other facilities, assets, or buildings, but is not expected to affect their ability to operate
- There are no hazardous materials in the asset

Asset - Hangar Development Areas
Primary asset criticality factors influencing risk ratings for this asset:

- Asset may inaccessible/inoperable for more than a day but less than a week after natural hazard event
- Loss/inoperability of the asset would have impacts limited to local area and/or municipality
- Inoperability of the asset would not be expected to result in injuries
- Inoperability is likely to significantly impact other facilities, assets, or buildings and will likely affect their ability to operate
- There are no hazardous materials in the asset

Asset - Forested Area
Primary asset criticality factors influencing risk ratings for this asset:

No score available

Project Climate Resilience Design Standards Output

Climate Resilience Design Standards and Guidance are recommended for each asset and climate parameter. The Design Standards for each climate parameter include the following: recommended planning horizon (target and/or intermediate), recommended return period (Sea Level Rise/Storm Surge and Precipitation) or percentile (Heat), and a list of applicable design criteria that are likely to be affected by climate change. Some design criteria have numerical values associated with the recommended return period and planning horizon, while others have tiered methodologies with step-by-step instructions on how to estimate design values given the other recommended design standards.

Asset: Terminal Building — Building/Facility

Sea Level Rise/Storm Surge — Low Risk

Applicable Design Criteria

Projected Tidal Datums: NOT APPLICABLE

Projected Water Surface Elevation: NOT APPLICABLE

Projected Wave Action Water Elevation: NOT APPLICABLE

Projected Wave Heights: NOT APPLICABLE

Projected Duration of Flooding: NOT APPLICABLE

Projected Design Flood Velocity: NOT APPLICABLE

Projected Scour & Erosion: NOT APPLICABLE

Extreme Precipitation — High Risk

Target Planning Horizon: 2070
Return Period: 100-yr (1%)

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Terminal Building	2070	100-Year (1%)	9.7	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Extreme Heat — High Risk

Target Planning Horizon: 2070
Percentile: 90th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Projected Heat Index: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): APPLICABLE
Methodology to Estimate Projected Values : Tier 3

Asset: Runways and Taxiways — Infrastructure

Sea Level Rise/Storm Surge — Low Risk

Applicable Design Criteria

Projected Tidal Datums: NOT APPLICABLE

Projected Water Surface Elevation: NOT APPLICABLE

Projected Wave Action Water Elevation: NOT APPLICABLE

Projected Wave Heights: NOT APPLICABLE

Projected Duration of Flooding: NOT APPLICABLE

Projected Design Flood Velocity: NOT APPLICABLE

Projected Scour & Erosion: NOT APPLICABLE

Extreme Precipitation — High Risk

Target Planning Horizon: 2050
Return Period: 10-yr (10%)

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for

construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Runways and Taxiways	2050	10-Year (10%)	6.1	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Extreme Heat High Risk

Target Planning Horizon: 2050
Percentile: 50th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Heat Index: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): NOT APPLICABLE

Asset: Hangar Development Areas Infrastructure

Sea Level Rise/Storm Surge Low Risk

Applicable Design Criteria

Projected Tidal Datums: NOT APPLICABLE

Projected Water Surface Elevation: NOT APPLICABLE

Projected Wave Action Water Elevation: NOT APPLICABLE

Projected Wave Heights: NOT APPLICABLE

Projected Duration of Flooding: NOT APPLICABLE

Projected Design Flood Velocity: NOT APPLICABLE

Projected Scour & Erosion: NOT APPLICABLE

Extreme Precipitation High Risk

Target Planning Horizon: 2070
Return Period: 25-yr (4%)

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic

Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Hangar Development Areas	2070	25-Year (4%)	7.7	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Extreme Heat High Risk

Target Planning Horizon: 2070
Percentile: 50th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Heat Index: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): NOT APPLICABLE

Asset: Forested Area Natural Resources

Sea Level Rise/Storm Surge

Applicable Design Criteria

Projected Tidal Datums: NOT APPLICABLE

Projected Water Surface Elevation: NOT APPLICABLE

Projected Wave Action Water Elevation: NOT APPLICABLE

Projected Wave Heights: NOT APPLICABLE

Return Period Recommendations for natural resource assets and subsequent projected values are provided as a consideration for users, not a formal standard. Users should follow industry best practices for designing natural resource assets in coordination with the appropriate regulatory agencies.

Projected Duration of Flooding: NOT APPLICABLE

Projected Design Flood Velocity: NOT APPLICABLE

Projected Scour & Erosion: NOT APPLICABLE

Extreme Precipitation

Target Planning Horizon: 2030

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 1

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Forested Area	2030	25-Year (4%)	6.8	Downloadable Methodology PDF

Return Period Recommendations for natural resource assets and subsequent projected values are provided as a consideration for users, not a formal standard. Users should follow industry best practices for designing natural resource assets in coordination with the appropriate regulatory agencies.

ATTENTION: This is a Tier 1 project. It is advised to compare the extreme precipitation output values to the NOAA+ methodology to calculate total precipitation depth for 24-hr design storms.

This methodology can be found in the following PDF. (Link).

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE
Methodology to Estimate Projected Values : Tier 1

Extreme Heat

Target Planning Horizon: 2030
Percentile: 50th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 1

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 1

Projected Heat Index: NOT APPLICABLE

Projected Growing Degree Days: APPLICABLE
Methodology to Estimate Projected Values : Tier 1

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: NOT APPLICABLE

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: NOT APPLICABLE

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): NOT APPLICABLE

Project Inputs

Core Project Information

Name:	Cape Cod Gateway Master Plan Update
Given the expected useful life of the project, through what year do you estimate the project to last (i.e. before a major reconstruction/renovation)?	2092
Location of Project:	Barnstable
Estimated Capital Cost:	$111,000,000
Who is the Submitting Entity?	City/Town Barnstable Katie Servis (kservis@flyhya.com)
Is this project identified as a priority project in the Municipal Vulnerability Preparedness (MVP) plan or the local or regional Hazard Mitigation Plan (HMP)?	No
Is this project being submitted as part of a state grant application?	Yes
What stage are you in your project lifecycle?	Planning
Is climate resiliency a core objective of this project?	No
Is this project being submitted as part of the state capital planning process?	Yes
Is this project being submitted as part of a regulatory review process or permitting?	Yes
Brief Project Description:	This airport master plan is required by the FAA in order to plan for the future and highlight airport projects needed to meet demand, including rehabilitation of existing infrastructure. The master plan not only considers the needs of aviation (the airfield, local general aviation, corporate aviation, and commercial aviation) over the next 20 years but also considers the needs of Cape Cod and the local region and economy. Environmental review under MEPA. NEPA and the Cape Cod Commission is part of this project.
Project Submission Comments:	

Project Ecosystem Service Benefits

Factors Influencing Output

- ✓ Project provides flood protection through nature-based solutions
- ✓ Project reduces storm damage
- ✓ Project protects public water supply
- ✓ Project promotes decarbonization
- ✓ Project recharges groundwater
- ✓ Project filters stormwater using green infrastructure
- ✓ Project improves water quality
- ✓ Project protects fisheries, wildlife, and plant habitat
- ✓ Project remediates existing sources of pollution
- ✓ Project provides recreation
- ✓ Project improves air quality
- ✓ Project prevents pollution

Factors to Improve Output

- ✓ Incorporate nature-based solutions that sequester carbon carbon
- ✓ Preserve, enhance, and/or restore coastal shellfish habitats
- ✓ Incorporate vegetation that provides pollinator habitat
- ✓ Increase plants, trees, and/or other vegetation to provide oxygen production
- ✓ Incorporate education and/or protect cultural resources as part of your project

Is the primary purpose of this project ecological restoration?

No

Project Benefits

Provides flood protection through nature-based solutions	Yes
Reduces storm damage	Yes
Recharges groundwater	Yes
Protects public water supply	Yes
Filters stormwater using green infrastructure	Yes
Improves water quality	Yes
Promotes decarbonization	Yes
Enables carbon sequestration	No
Provides oxygen production	No
Improves air quality	Yes
Prevents pollution	Yes
Remediates existing sources of pollution	Yes
Protects fisheries, wildlife, and plant habitat	Yes

Protects land containing shellfish	No
Provides pollinator habitat	No
Provides recreation	Yes
Provides cultural resources/education	No

Project Climate Exposure

Is the primary purpose of this project ecological restoration?	No
Does the project site have a history of coastal flooding?	No
Does the project site have a history of flooding during extreme precipitation events (unrelated to water/sewer damages)?	No
Does the project site have a history of riverine flooding?	No
Does the project result in a net increase in impervious area of the site?	Yes
Are existing trees being removed as part of the proposed project?	Yes

Project Assets

Asset: Terminal Building
Asset Type: Typically Occupied
Asset Sub-Type: Airport
Construction Type: Major Repair/Retrofit
Construction Year: 2026
Useful Life: 60
Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Building may be inaccessible/inoperable during natural hazard event, but must be accessible/operable within one day after natural hazard event
Identify the geographic area directly affected by permanent loss or significant inoperability of the building/facility.
Impacts would be regional (more than one municipality and/or surrounding region)
Identify the population directly served that would be affected by the permanent loss of use or inoperability of the building/facility.
Greater than 10,000 people
Identify if the building/facility provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
The building/facility does not provide services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
If the building/facility became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?
Inoperability of the building/facility would not be expected to result in injuries
If there are hazardous materials in your building/facility, what are the extent of impacts related to spills/releases of these materials?
Spills and/or releases of hazardous materials would be relatively easy to clean up
If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?
Significant – Inoperability is likely to impact other facilities, assets, or buildings and will likely affect their ability to operate
If this building/facility was damaged beyond repair, how much would it approximately cost to replace?
Between $30 million and $100 million
Is this a recreational facility which can be vacated during a natural hazard event?
No
If the building/facility became inoperable for longer than acceptable in Question 1, what are the public and/or social services impacts?
Some alternative programs and/or services are available to support the community
If the building/facility became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?
No impact on surrounding natural resources is expected
If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the building is not able to serve or operate its intended users or function)?
Loss of building may reduce the ability to maintain some government services, while a majority of services will still exist.
If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts to loss of confidence in government (i.e. the building is not able to serve or operate its intended users or function)?
Reduced morale and public support
Asset: Runways and Taxiways
Asset Type: Transportation
Asset Sub-Type: Other Transportation
Construction Type: Major Repair/Retrofit
Construction Year: 2032
Useful Life: 20
Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Infrastructure may be inaccessible/inoperable more than a week after natural hazard event without consequences.
Identify the geographic area directly affected by permanent loss or significant inoperability of the infrastructure.
Impacts limited to location of infrastructure only
Identify the population directly served that would be affected by the permanent loss or significant inoperability of the infrastructure.
Less than 5,000 people
Identify if the infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

The infrastructure does not provide services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

Will the infrastructure reduce the risk of flooding?

No

If the infrastructure became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?

Inoperability of the infrastructure would not be expected to result in injuries

If there are hazardous materials in your infrastructure, what are the extents of impacts related to spills/releases of these materials?

There are no hazardous materials in the infrastructure

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?

Moderate – Inoperability may impact other facilities, assets, or buildings, but cascading impacts do not affect the ability of other facilities, assets, or buildings to operate

If the infrastructure was damaged beyond repair, how much would it approximately cost to replace?

Less than $10 million

Does the infrastructure function as an evacuation route during emergencies? This question only applies to roadway projects.

No

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?

No impact on surrounding natural resources is expected

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the infrastructure is not able to serve or operate its intended users or function)?

Loss of infrastructure is not expected to reduce the ability to maintain government services

What are the impacts to loss of confidence in government resulting from loss of infrastructure functionality (i.e. the infrastructure asset is not able to serve or operate its intended users or function)?

Loss of confidence in government agency

Asset: Hangar Development Areas

Asset Type: Transportation

Asset Sub-Type: Other Transportation

Construction Type: New Construction

Construction Year: 2032

Useful Life: 60

Identify the length of time the asset can be inaccessible/inoperable without significant consequences.

Infrastructure may be inaccessible/inoperable for more than a day, but less than a week after natural hazard without consequences.

Identify the geographic area directly affected by permanent loss or significant inoperability of the infrastructure.

Impacts would be limited to local area and/or municipality

Identify the population directly served that would be affected by the permanent loss or significant inoperability of the infrastructure.

Less than 5,000 people

Identify if the infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

The infrastructure does not provide services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

Will the infrastructure reduce the risk of flooding?

No

If the infrastructure became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?

Inoperability of the infrastructure would not be expected to result in injuries

If there are hazardous materials in your infrastructure, what are the extents of impacts related to spills/releases of these materials?

There are no hazardous materials in the infrastructure

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?

Significant – Inoperability is likely to impact other facilities, assets, or buildings and result in cascading impacts that will likely affect their ability to operate

If the infrastructure was damaged beyond repair, how much would it approximately cost to replace?

Less than $10 million

Does the infrastructure function as an evacuation route during emergencies? This question only applies to roadway projects.

No

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?

No impact on surrounding natural resources is expected

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the infrastructure is not able to serve or operate its intended users or function)?

Loss of infrastructure is not expected to reduce the ability to maintain government services

What are the impacts to loss of confidence in government resulting from loss of infrastructure functionality (i.e. the infrastructure asset is not able to serve or operate its intended users or function)?

Reduced morale and public support

Asset: Forested Area

Asset Type: Forested Ecosystems
Asset Sub-Type: Upland forest
Construction Type: New Construction
Construction Year: 2025
Monitoring Frequency: 1

Report Comments

N/A

Appendix H

SEL Noise Analysis

Appendix G.
Single Exposure Levels
Selected Aircraft
2019 Existing Conditions Operations

Table 1: Sound Exposure Level - E190

Location	Coordinates		Sound Exposure Level			
			Runway 15	Runway 33	Runway 6	Runway 24
	Latitude	Longitude	dBA	dBA	dBA	dBA
Hyannis Park	41.645754	-70.269207	85	77	68	73
Barnstable Village	41.692292	-70.294828	71	82	68	67

Table 2: Sound Exposure Level - CL60

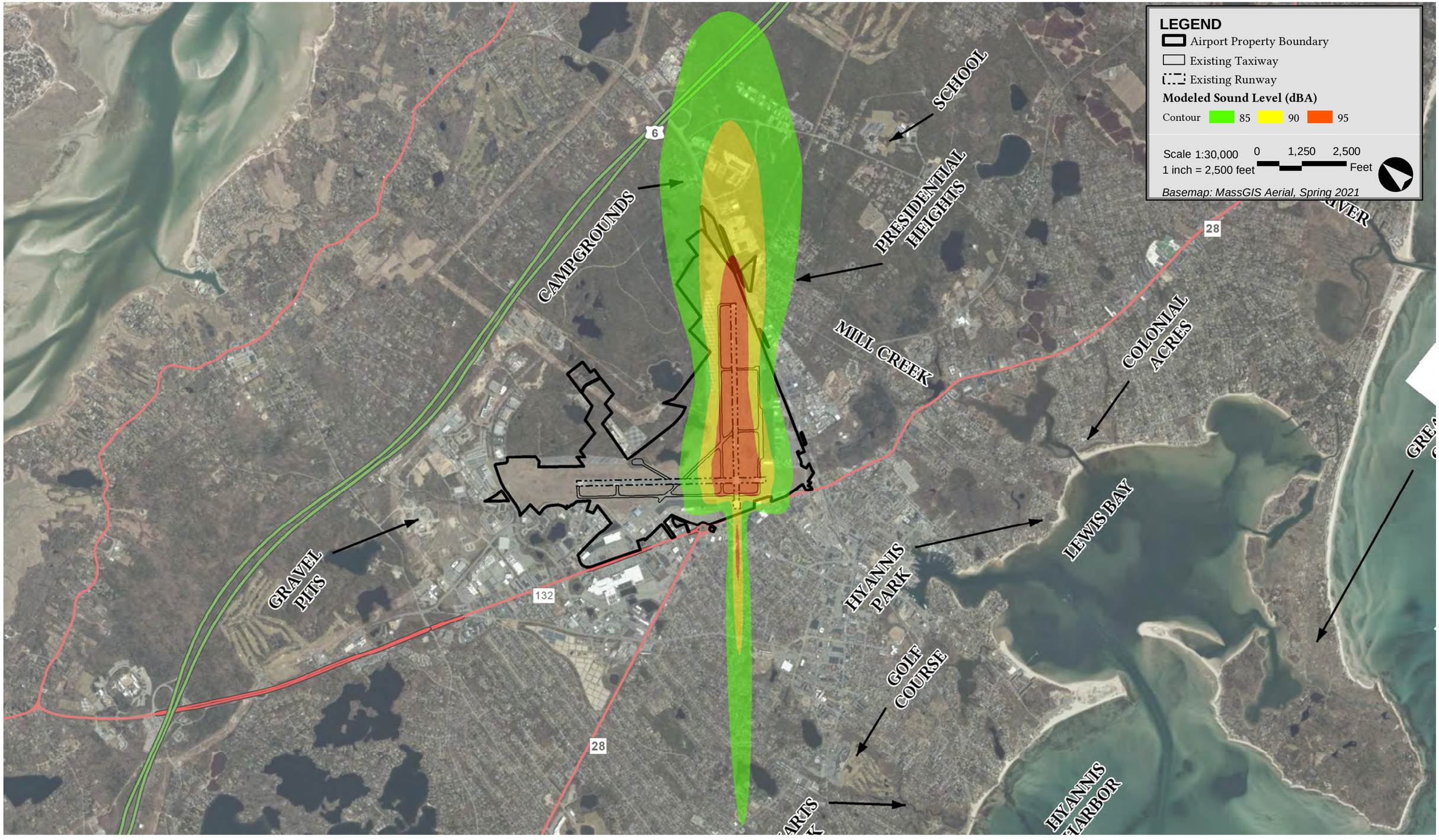
Location	Coordinates		Sound Exposure Level			
			Runway 15	Runway 33	Runway 6	Runway 24
	Latitude	Longitude	dBA	dBA	dBA	dBA
Hyannis Park	41.645754	-70.269207	83	68	63	65
Barnstable Village	41.692292	-70.294828	64	78	60	61

Table 3: Sound Exposure Level - SR22

Location	Coordinates		Sound Exposure Level			
			Runway 15	Runway 33	Runway 6	Runway 24
	Latitude	Longitude	dBA	dBA	dBA	dBA
Hyannis Park	41.645754	-70.269207	77	68	60	64
Barnstable Village	41.692292	-70.294828	62	74	59	59

Table 4: Sound Exposure Level - C402

Location	Coordinates		Sound Exposure Level			
			Runway 15	Runway 33	Runway 6	Runway 24
	Latitude	Longitude	dBA	dBA	dBA	dBA
Hyannis Park	41.645754	-70.269207	82	73	67	71
Barnstable Village	41.692292	-70.294828	68	79	66	66


LEGEND
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Existing Taxiway
Existing Runway
Modeled Sound Level (dBA)
Contour 85 90 95
Scale 1:30,000
1 inch = 2,500 feet
0 1,250 2,500
Feet
Basemap: MassGIS Aerial, Spring 2021
SCHOOL
PRESIDENTIAL HEIGHTS
CAMPGROUNDS
MILL CREEK
COLONIAL ACRES
GRAVEL PITS
HYANNIS PARK
LEWIS BAY
GOLF COURSE
HYANNIS HARBOR
6
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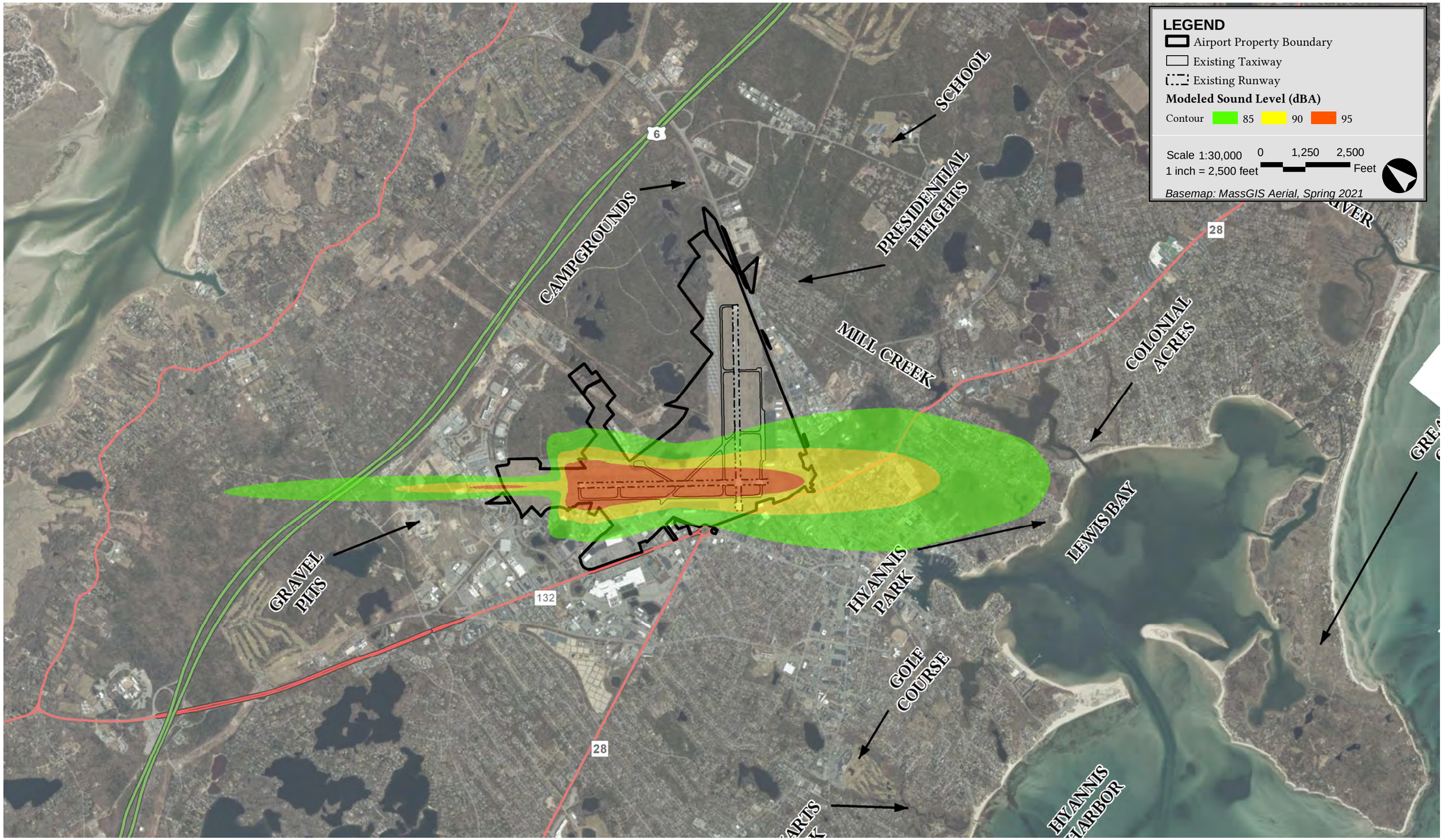

Modeled Sound Level: C402 - Runway 15

LEGEND
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Existing Taxiway
Existing Runway
Modeled Sound Level (dBA)
Contour 85 90 95
Scale 1:30,000
1 inch = 2,500 feet
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Feet
Basemap: MassGIS Aerial, Spring 2021
SCHOOL
CAMPGROUNDS
PRESIDENTIAL HEIGHTS
MILL CREEK
COLONIAL ACRES
ARKERS RIVER
GRAVEL PITS
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GOLF COURSE
LEWIS BAY
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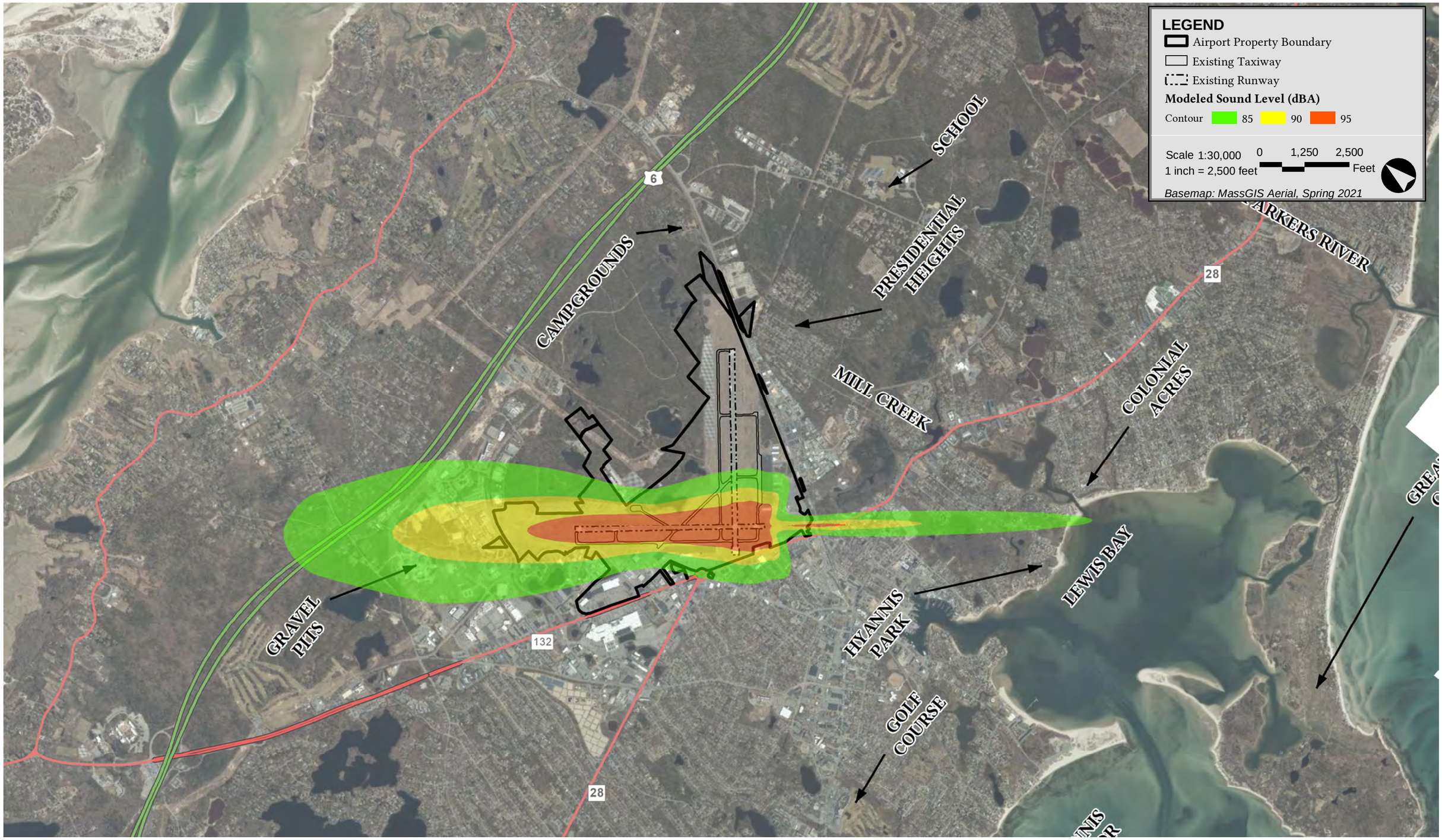
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Existing Taxiway
Existing Runway
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Contour 85 90 95
Scale 1:30,000
1 inch = 2,500 feet
0 1,250 2,500
Feet
Basemap: MassGIS Aerial, Spring 2021
SCHOOL
CAMPGROUNDS
PRESIDENTIAL HEIGHTS
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HYANNIS PARK GOLF COURSE
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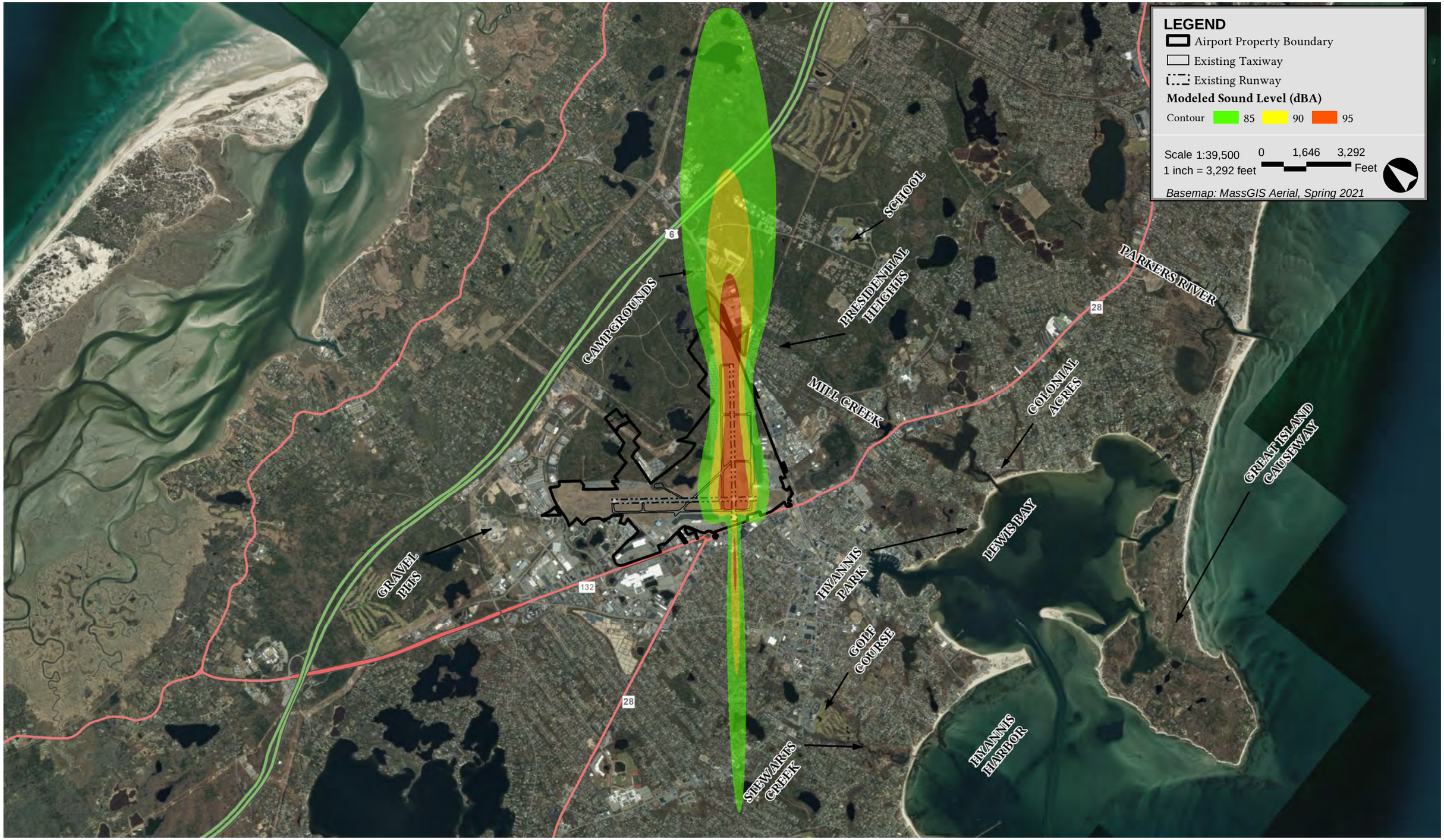
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Existing Runway
Modeled Sound Level (dBA)
Contour 85 90 95
Scale 1:39,500
1 inch = 3,292 feet
0 1,646 3,292
Feet
Basemap: MassGIS Aerial, Spring 2021
SCHOOL
CAMPGROUNDS
PRESIDENTIAL HEIGHTS
PARKERS RIVER
MILL CREEK
COLONIAL ACRES
GREAT ISLAND CAUSEWAY
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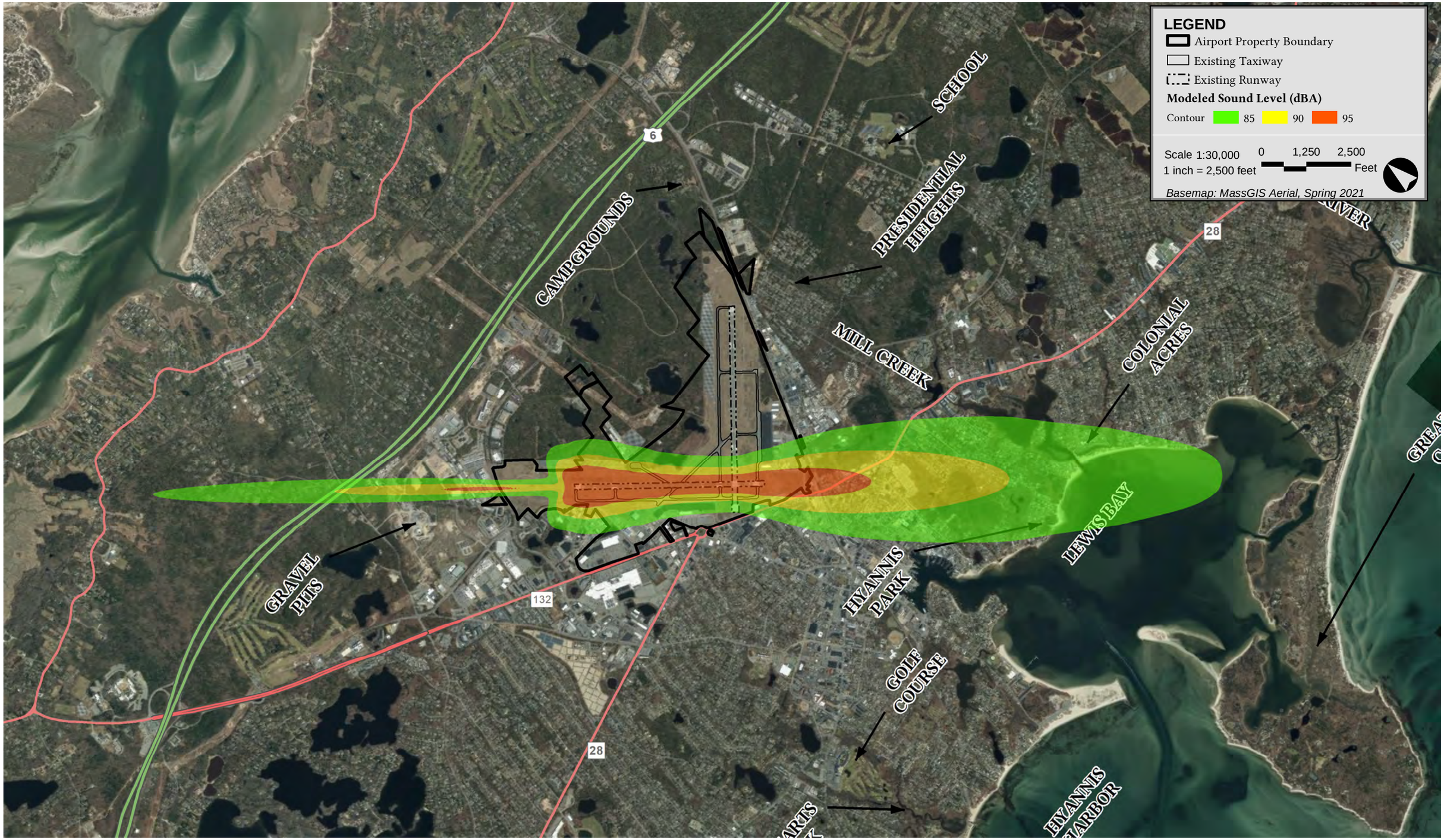
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Existing Runway
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0 1,250 2,500
Feet
Basemap: MassGIS Aerial, Spring 2021
SCHOOL
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PRESIDENTIAL HEIGHTS
MILL CREEK
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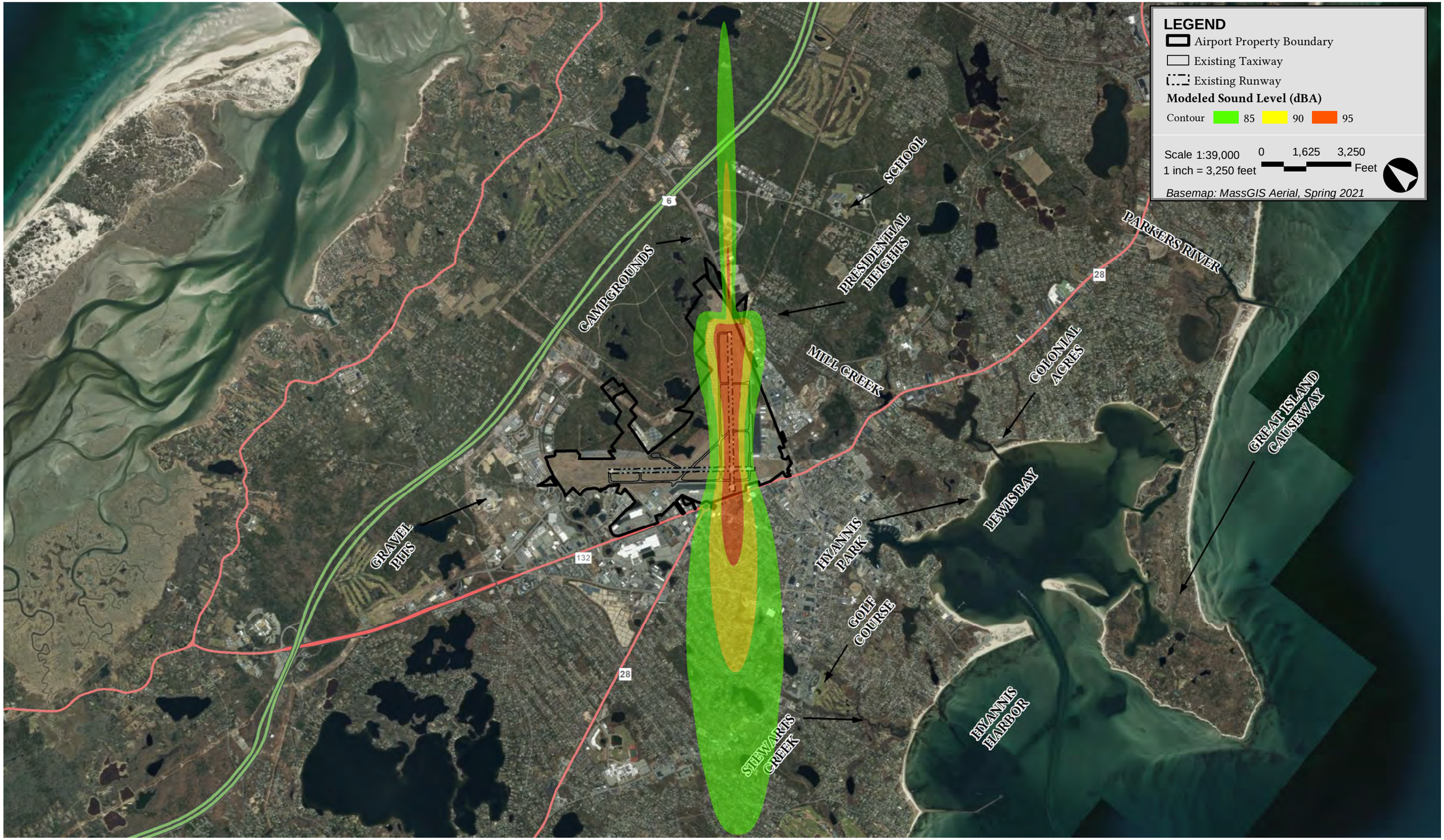
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Contour 85 90 95
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1 inch = 3,250 feet
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Feet
Basemap: MassGIS Aerial, Spring 2021
SCHOOL
CAMPGROUNDS
PRESIDENTIAL HEIGHTS
PARKERS RIVER
MILL CREEK
COLONIAL ACRES
GREAT ISLAND CAUSEWAY
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HYANNIS HARBOR
STEWARTS CREEK
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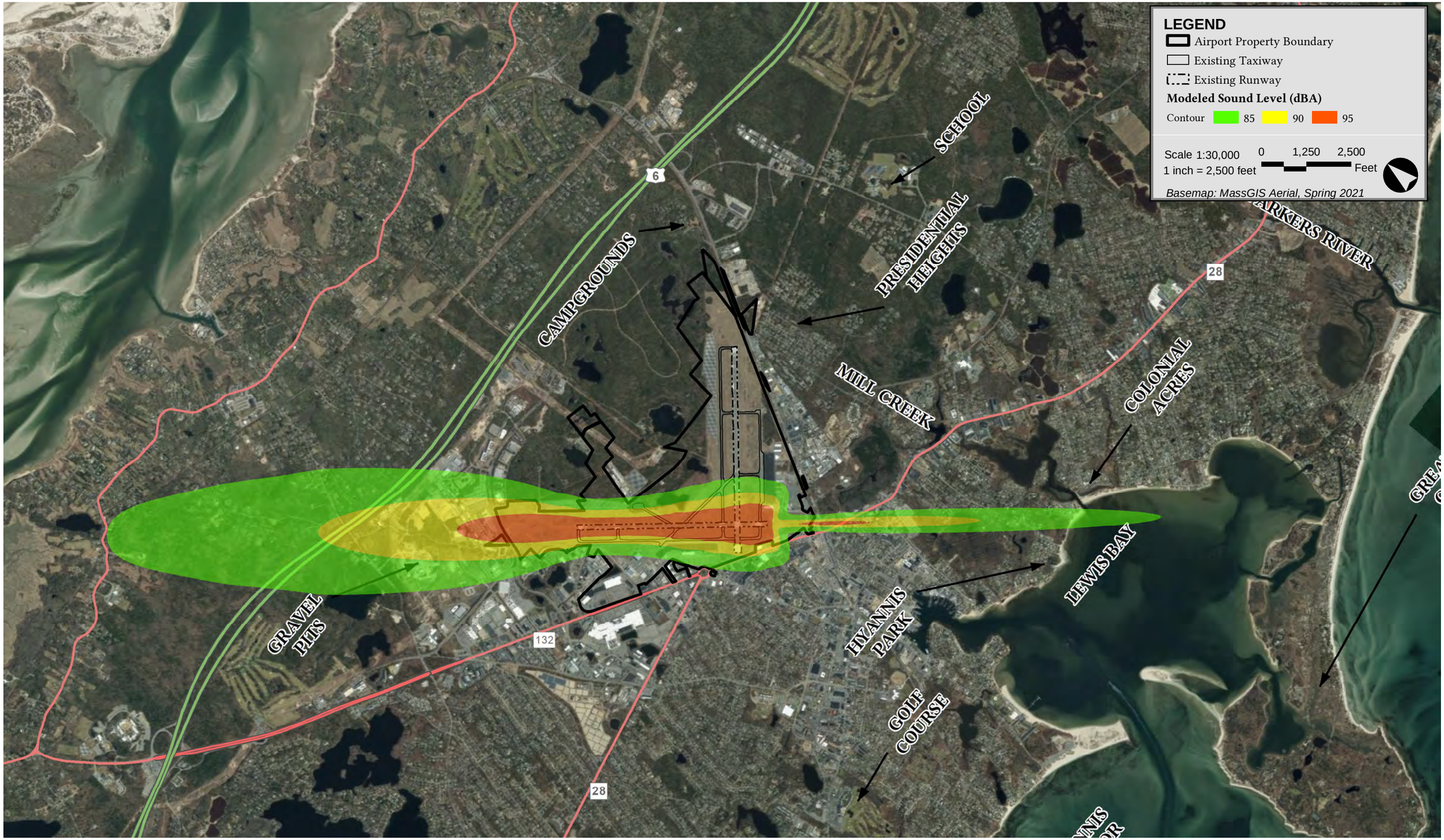
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Existing Runway
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Contour 85 90 95
Scale 1:30,000
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0 1,250 2,500
Feet
Basemap: MassGIS Aerial, Spring 2021
SCHOOL
CAMPGROUNDS
PRESIDENTIAL HEIGHTS
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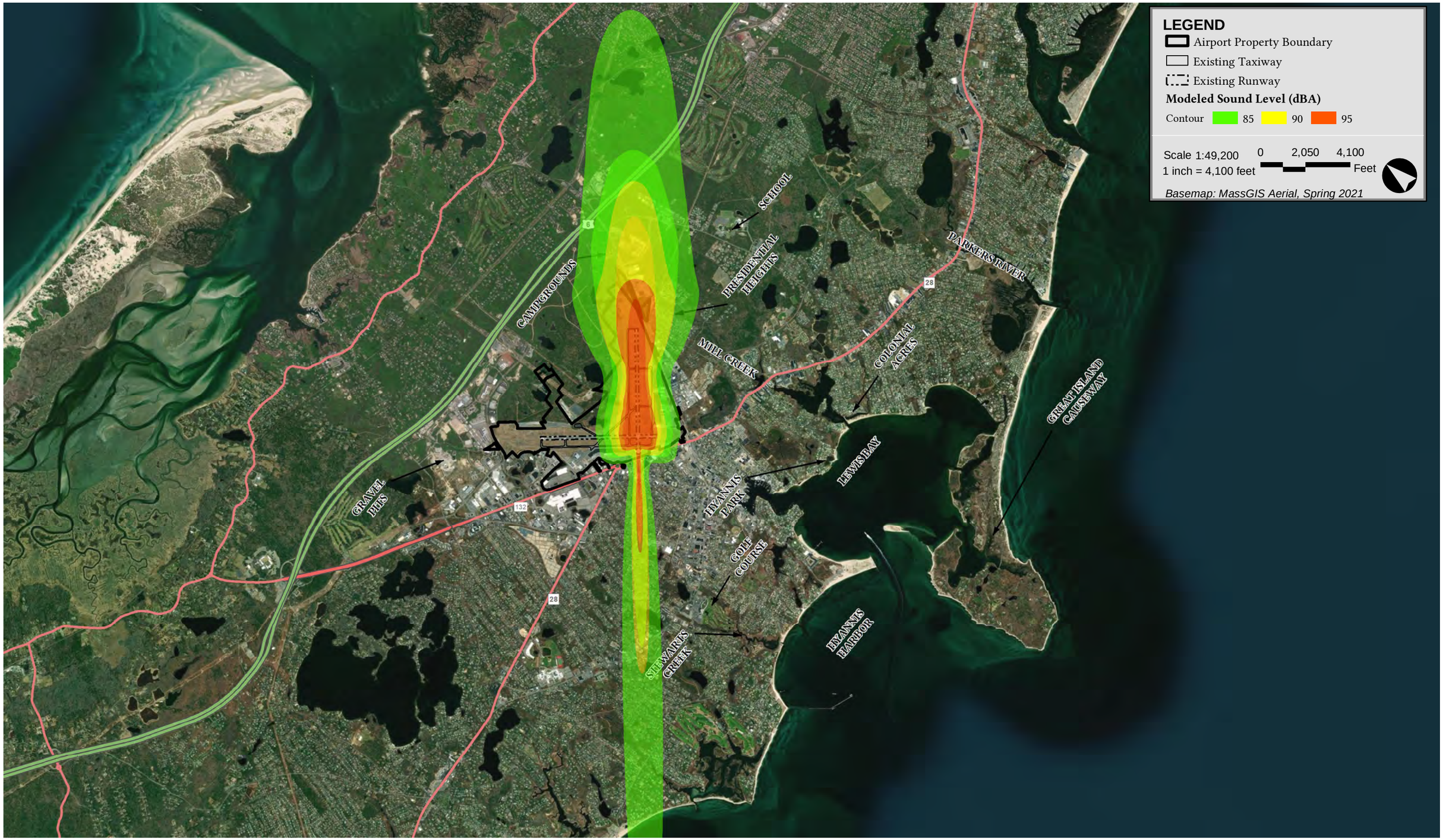
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Contour 85 90 95
Scale 1:49,200
1 inch = 4,100 feet
0 2,050 4,100
Feet
Basemap: MassGIS Aerial, Spring 2021
SCHOOL
CAMPGROUNDS
PRESIDENTIAL HEIGHTS
PARKERS RIVER
MILL CREEK
COLONIAL ACRES
GREAT ISLAND CAUSEWAY
GRAVEL HILLS
HYANNIS PARK
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SEWARTIS CREEK
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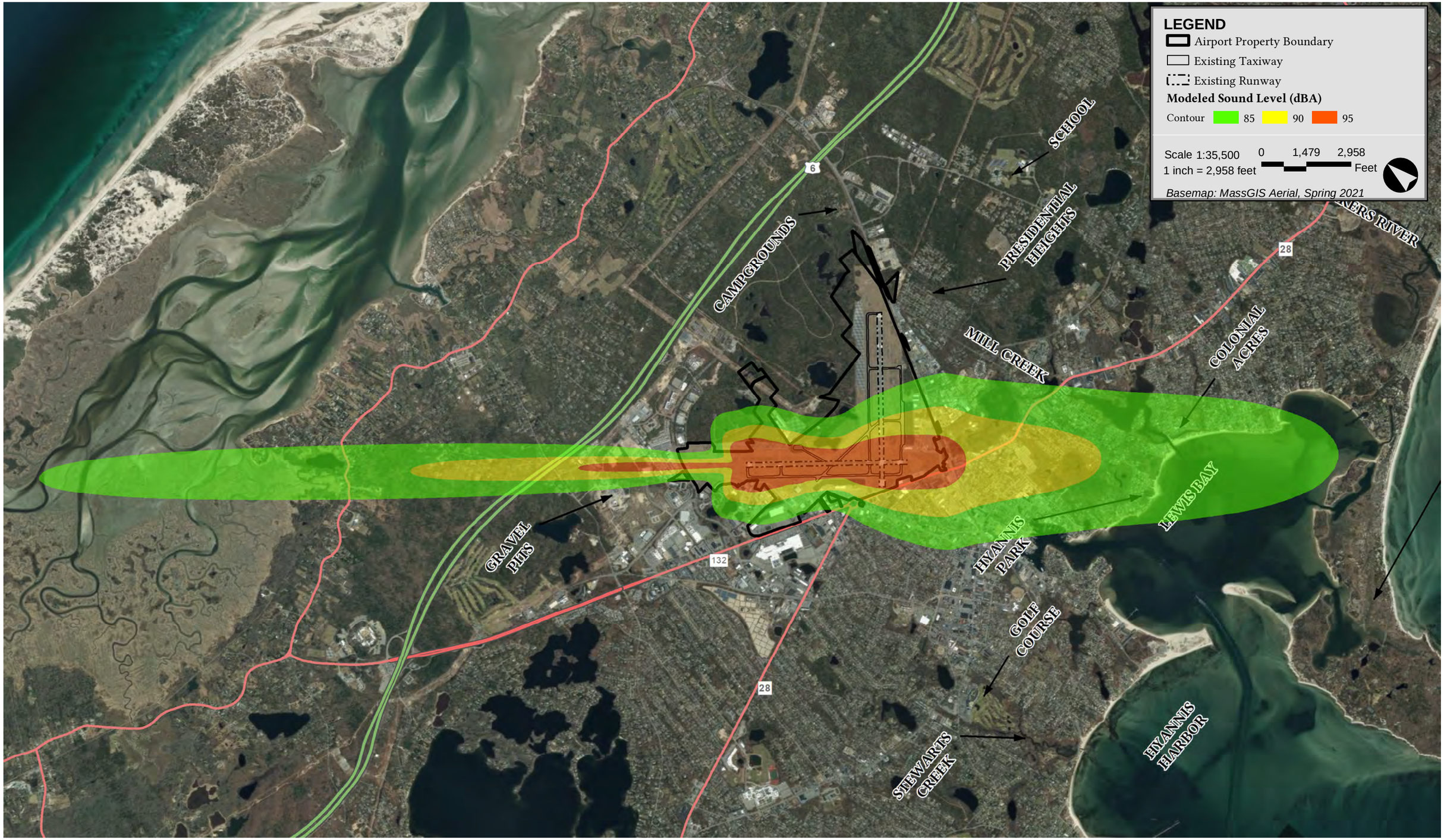
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Existing Runway
Modeled Sound Level (dBA)
Contour 85 90 95
Scale 1:35,500
1 inch = 2,958 feet
0 1,479 2,958
Feet
Basemap: MassGIS Aerial, Spring 2021
SCHOOL
CAMPGROUNDS
PRESIDENTIAL HEIGHTS
MILL CREEK
COLONIAL ACRES
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STEWARTS CREEK
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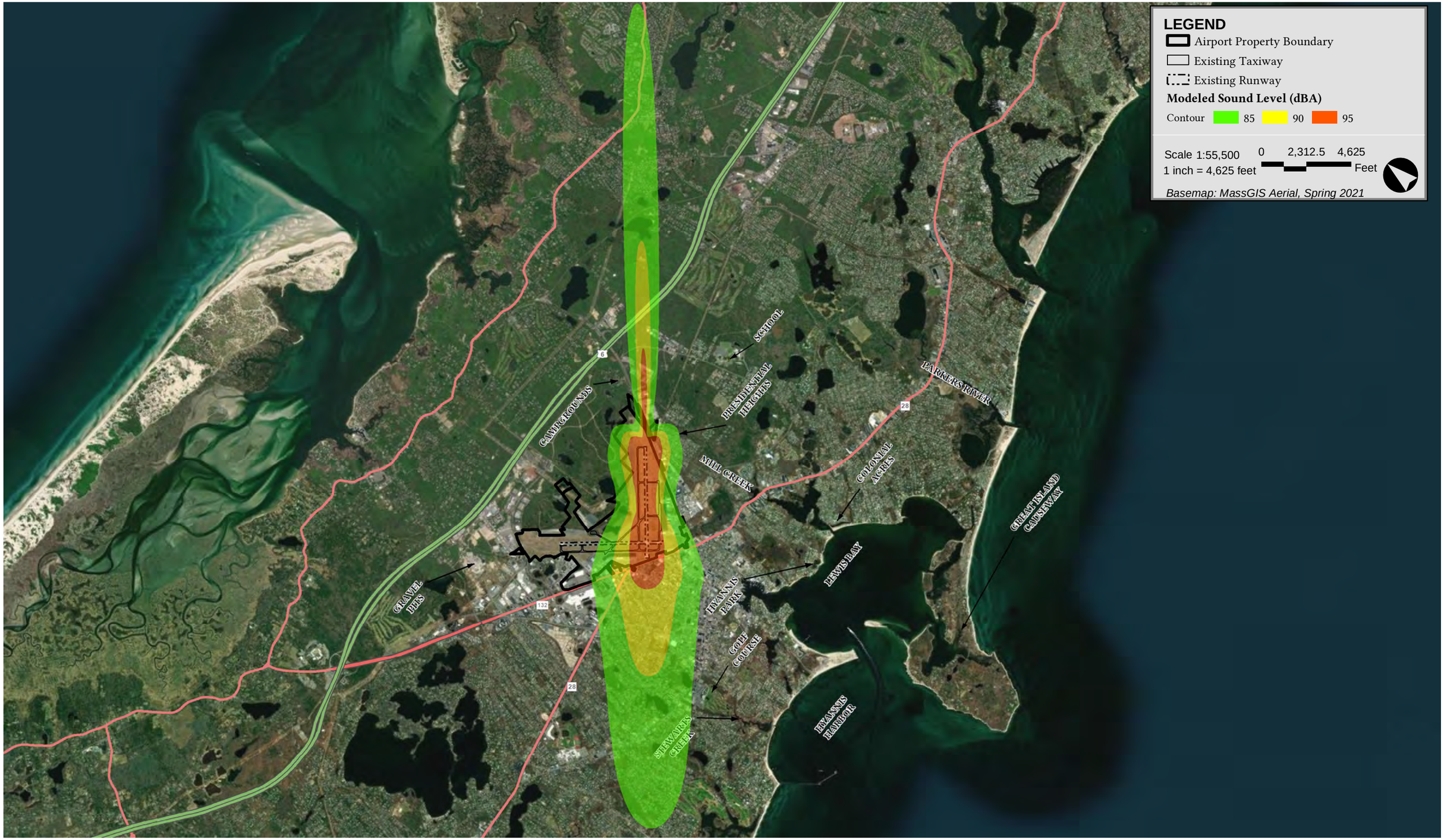
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Existing Runway
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Feet
Basemap: MassGIS Aerial, Spring 2021
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CAMPGROUNDS
PRESIDENTIAL HEIGHTS
PARKERS RIVER
MILL CREEK
COLONIAL ACRES
GREAT ISLAND CAUSEWAY
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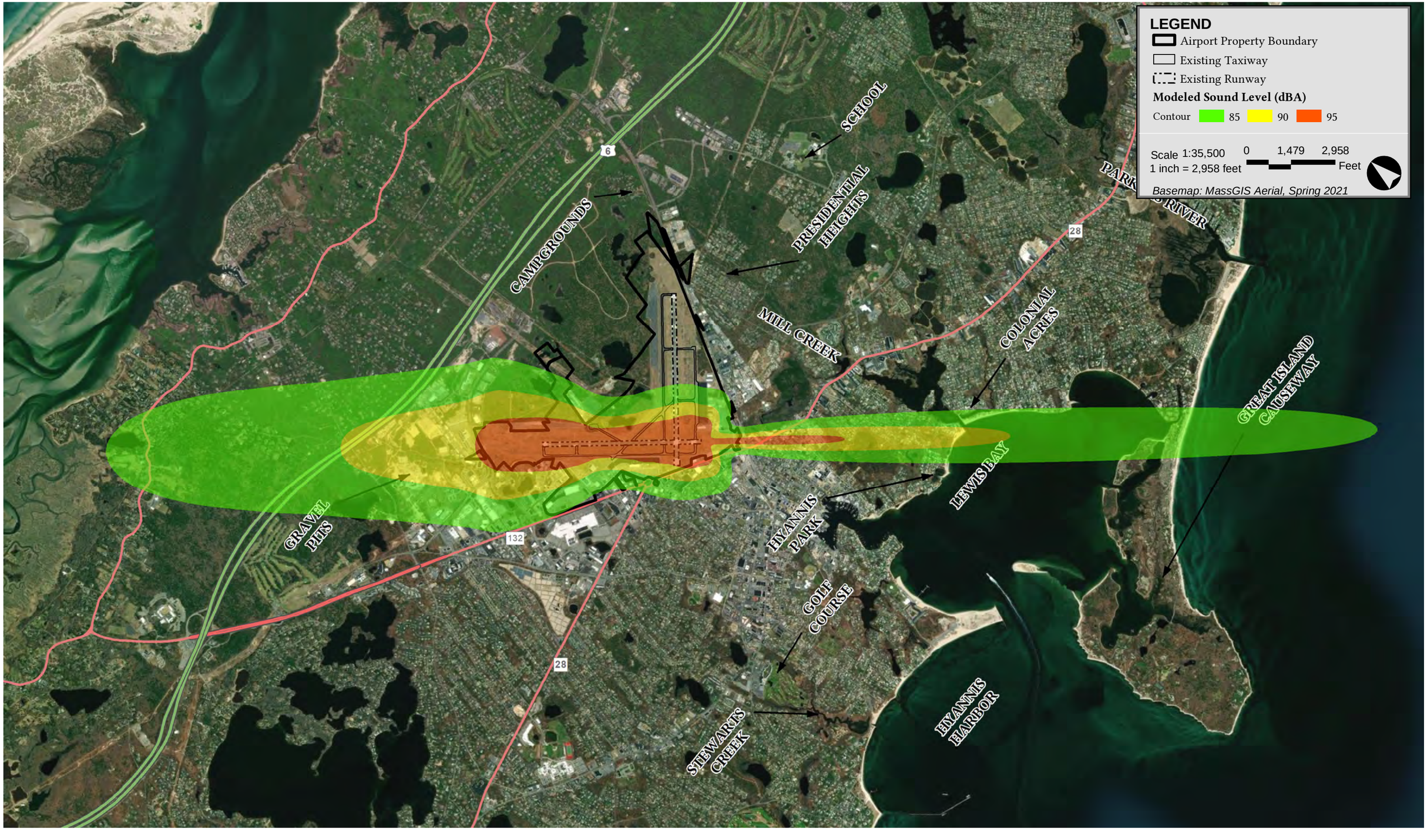
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Existing Runway
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Feet
Basemap: MassGIS Aerial, Spring 2021
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PRESIDENTIAL HEIGHTS
MILL CREEK
COLONIAL ACRES
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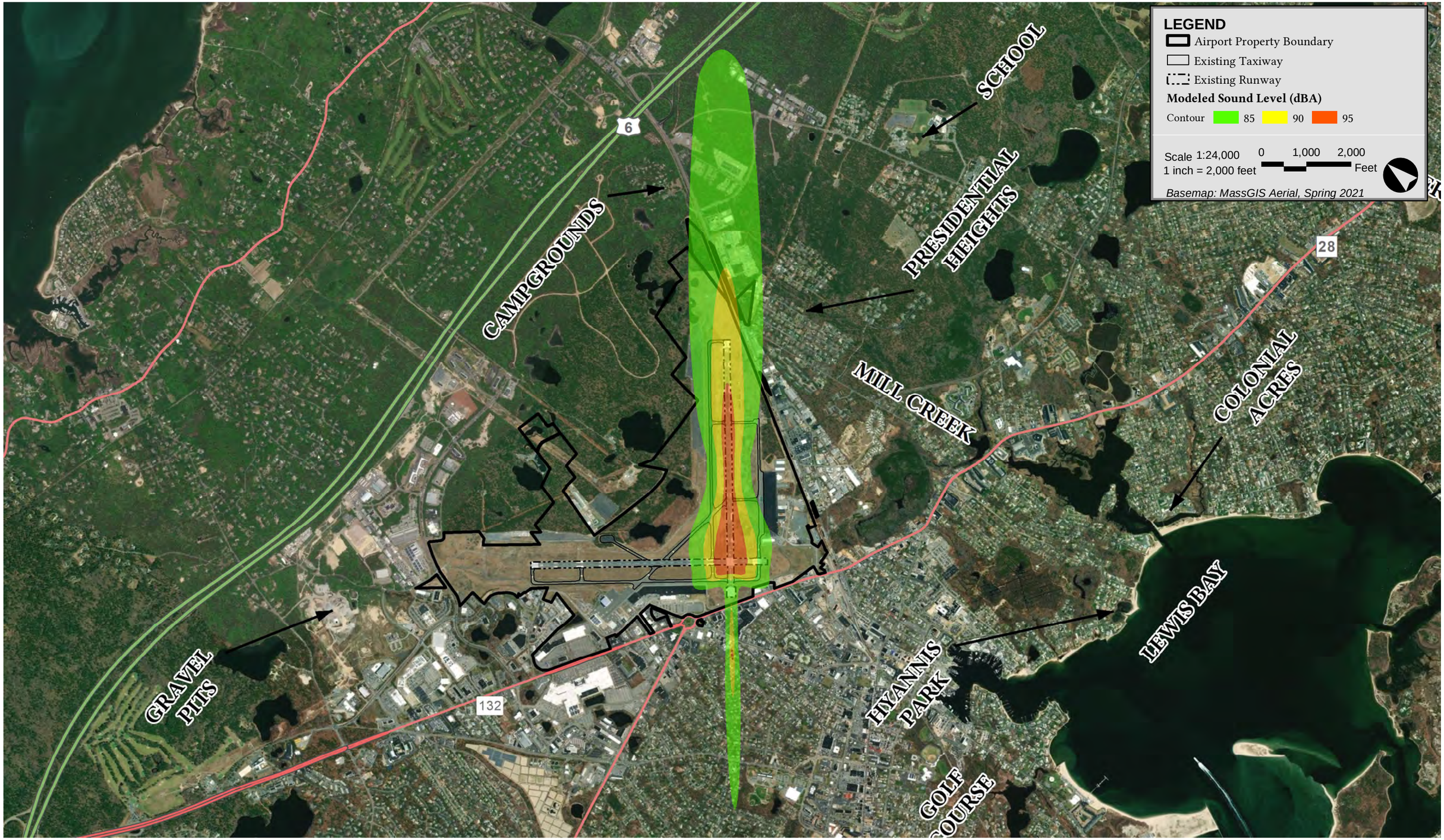
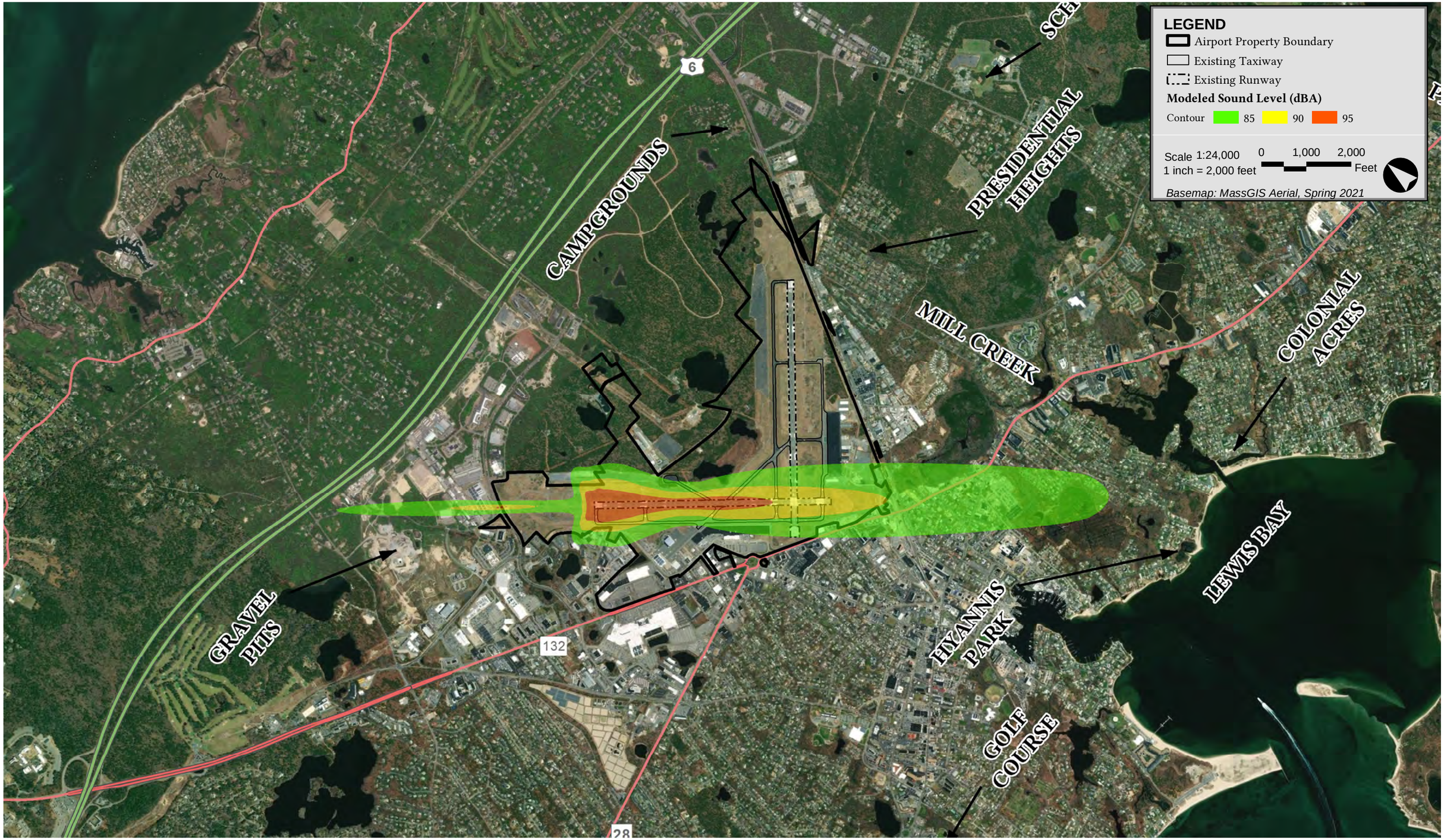


Modeled Sound Level: SR22 - Runway 6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Feet
Basemap: MassGIS Aerial, Spring 2021
CAMPGROUNDS
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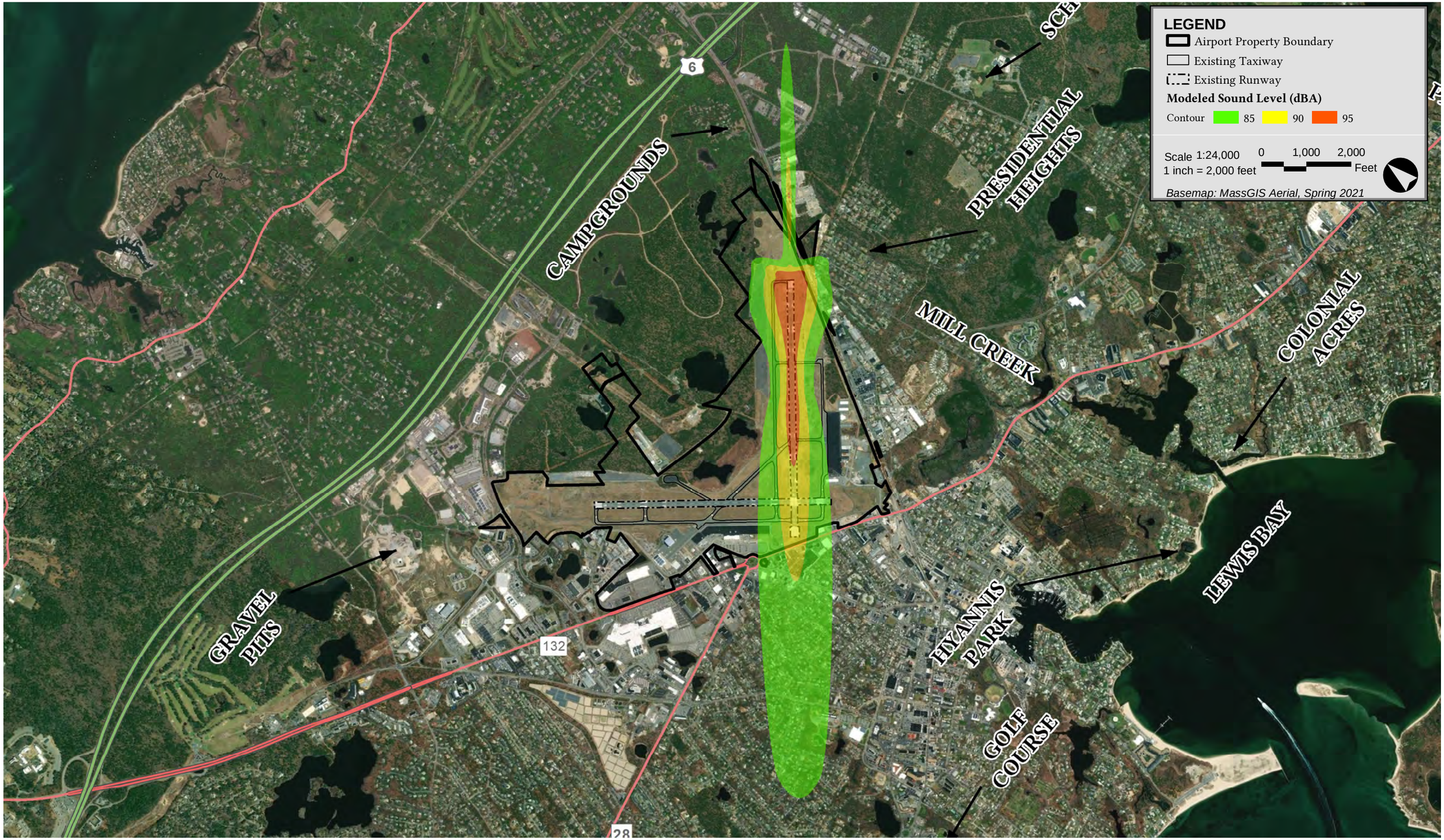
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Feet
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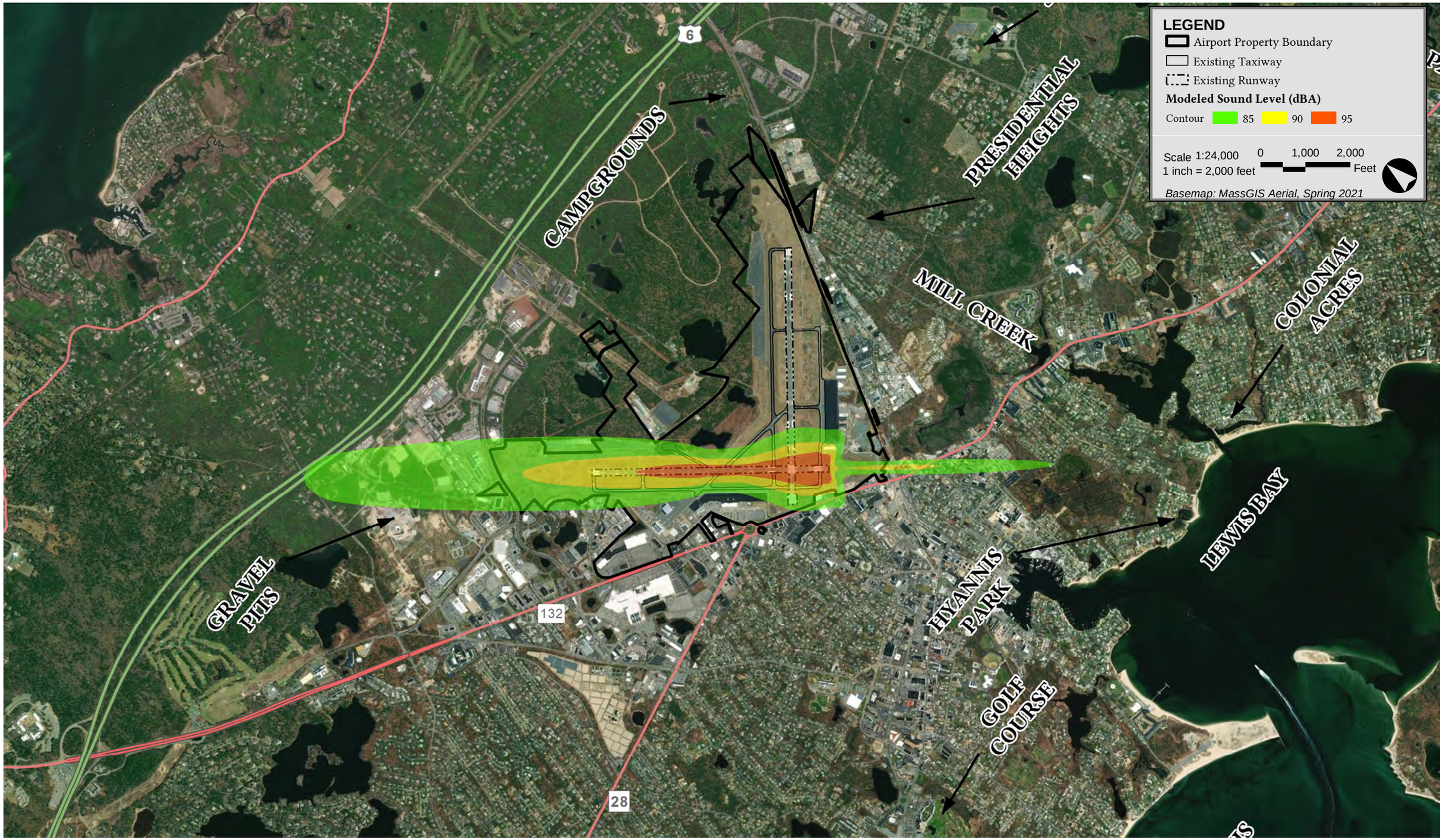
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Feet
Basemap: MassGIS Aerial, Spring 2021
CAMPGROUNDS
PRESIDENTIAL HEIGHTS
MILL CREEK
COLONIAL ACRES
LEWIS BAY
GRAVEL PITS
HYANNIS PARK
GOLF COURSE
6
132
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Appendix I

USFS iPaC list

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To:
Project code: 2024-0024182
Project Name: HYA Master Plan Improvements

December 07, 2023

Federal Nexus: yes
Federal Action Agency (if applicable):

Subject: Technical assistance for 'HYA Master Plan Improvements'

Dear Alyssa Jacobs:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on December 07, 2023, for 'HYA Master Plan Improvements' (here forward, Project). This project has been assigned Project Code 2024-0024182 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project. **Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter.**

Determination for the Northern Long-Eared Bat

Based on your IPaC submission and the standing analysis for the Dkey, your project has reached the determination of "May Affect" the northern long-eared bat.

Next Steps

Your action may qualify for the Interim Consultation Framework for the northern long-eared bat. To determine if it qualifies, review the Interim Consultation Framework posted here https://www.fws.gov/library/collections/interim-consultation-framework-northern-long-eared-bat. If you

determine it meets the requirements of the Interim Consultation Framework, follow the procedures outlined there to complete section 7 consultation.

If your project does **not** meet the requirements of the Interim Consultation Framework, please contact the New England Ecological Services Field Office for further coordination on this project. Further consultation or coordination with the Service is necessary for those species or designated critical habitats with a determination of “May Affect”.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- American Chaffseed *Schwalbea americana* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Sandplain Gerardia *Agalinis acuta* Endangered

You may coordinate with our Office to determine whether the Action may cause prohibited take of the species listed above.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

HYA Master Plan Improvements

2. Description

The following description was provided for the project 'HYA Master Plan Improvements':

> Multiple projects designed to improve airport safety and operational efficiency. Includes taxiway and runway work.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.67060375,-70.28808165919435,14z

DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of "may affect" for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

3. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Yes

4. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   No

5. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   No

6. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   No

7. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

   No

8. Have you determined that your proposed action will have no effect on the northern long-eared bat? Remember to consider the effects of any activities that would not occur but for the proposed action.

   If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer "No" below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project's action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a "no effect" determination for the northern long-eared bat.

   Note: Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer "No" and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of Effects of the Action can be found here: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

   No

9. [Semantic] Is the action area located within 0.5 miles of a known northern long-eared bat hibernaculum?

   Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

   Automatically answered

   No

10. Does the action area contain any caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating northern long-eared bats?

    No

11. Does the action area contain or occur within 0.5 miles of (1) talus or (2) anthropogenic or naturally formed rock crevices in rocky outcrops, rock faces or cliffs?

    No

12. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?
(If unsure, answer "Yes.")

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats (i.e., live trees and/or snags ≥3 inches (12.7 centimeter) dbh), answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    Yes

13. Will the action cause effects to a bridge?

    No

14. Will the action result in effects to a culvert or tunnel?

    No

15. Does the action include the intentional exclusion of northern long-eared bats from a building or structure?

    Note: Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local U.S. Fish and Wildlife Services Ecological Services Field Office to help assess whether northern long-eared bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures

    No

16. Does the action involve removal, modification, or maintenance of a human-made structure (barn, house, or other building) **known or suspected to contain roosting bats?**

    No

17. Will the action directly or indirectly cause construction of one or more new roads that are open to the public?

    Note: The answer may be yes when a publicly accessible road either (1) is constructed as part of the proposed action or (2) would not occur but for the proposed action (i.e., the road construction is facilitated by the proposed action but is not an explicit component of the project).

    No

18. Will the action include or cause any construction or other activity that is reasonably certain to increase average daily traffic on one or more existing roads?

    Note: For federal actions, answer ‘yes’ when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.). .

    No

19. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

    For federal actions, answer ‘yes’ when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

20. Will the proposed action involve the creation of a new water-borne contaminant source (e.g., leachate pond pits containing chemicals that are not NSF/ANSI 60 compliant)?

    No

21. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

    No

22. Will the action include drilling or blasting?

    No

23. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use)?

    No

24. Will the proposed action involve the use of herbicides or pesticides other than herbicides (e.g., fungicides, insecticides, or rodenticides)?

    No

25. Will the action include or cause activities that are reasonably certain to cause chronic nighttime noise in suitable summer habitat for the northern long-eared bat? Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time.

    Note: Additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    No

26. Does the action include, or is it reasonably certain to cause, the use of artificial lighting within 1000 feet of suitable northern long-eared bat roosting habitat?

    Note: Additional information defining suitable roosting habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    No

27. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

    Yes

28. Does the action include emergency cutting or trimming of hazard trees in order to remove an imminent threat to human safety or property? See hazard tree note at the bottom of the key for text that will be added to response letters

    Note: A "hazard tree" is a tree that is an immediate threat to lives, public health and safety, or improved property and has a diameter breast height of six inches or greater.

    No

29. Are any of the trees proposed for cutting or other means of knocking down, bringing down, topping, or trimming suitable for northern long-eared bat roosting (i.e., live trees and/or snags ≥3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities)?

    Yes

30. [Semantic] Does your project intersect a known sensitive area for the northern long-eared bat?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state agency or USFWS field office

    Automatically answered
    Yes

PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

5

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the inactive (hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas

5

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the active (non-hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas

0

Will all potential northern long-eared bat (NLEB) roost trees (trees ≥3 inches diameter at breast height, dbh) be cut, knocked, or brought down from any portion of the action area greater than or equal to 0.1 acre? If all NLEB roost trees will be removed from multiple areas, select 'Yes' if the cumulative extent of those areas meets or exceeds 0.1 acre.

Yes

Enter the extent of the action area (in acres) from which all potential NLEB roost trees will be removed. If all NLEB roost trees will be removed from multiple areas, entire the total extent of those areas. Round up to the nearest tenth of an acre.

5

For the area from which all potential northern long-eared bat (NLEB) roost trees will be removed, on how many acres (round to the nearest tenth of an acre) will trees be allowed to regrow? Enter '0' if the entire area from which all potential NLEB roost trees are removed will be developed or otherwise converted to non-forest for the foreseeable future.

0

Will any snags (standing dead trees) ≥3 inches dbh be left standing in the area(s) in which all northern long-eared bat roost trees will be cut, knocked down, or otherwise brought down?

No

Will all project activities by completed by April 1, 2024?

No

IPAC USER CONTACT INFORMATION

Agency: Epsilon Associates
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Address: 3 Mill & Main Place Suite 250
City: Maynard
State: MA
Zip: 01754
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Phone: 9784616271

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To: December 07, 2023
Project code: 2024-0024182
Project Name: HYA Master Plan Improvements

Federal Nexus: yes
Federal Action Agency (if applicable): Federal Aviation Administration

Subject: Federal agency coordination under the Endangered Species Act, Section 7 for 'HYA Master Plan Improvements'

Dear Alyssa Jacobs:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on December 07, 2023, for “HYA Master Plan Improvements” (here forward, Project). This project has been assigned Project Code 2024-0024182 and all future correspondence should clearly reference this number.

The Service developed the IPaC system and associated species’ determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into the IPaC must accurately represent the full scope and details of the Project. Failure to accurately represent or implement the Project as detailed in IPaC or the Northeast Determination Key (DKey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative effect(s)), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17). Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no further consultation with, or concurrence from, the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical

habitat, formal consultation is required (except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13]).

The IPaC results indicated the following species is (are) potentially present in your project area and, based on your responses to the Service's Northeast DKey, you determined the proposed Project will have the following effect determinations:

Species	Listing Status	Determination
American Chaffseed (*Schwalbea americana*)	Endangered	No effect

Conclusion If there are no updates on listed species, no further consultation/coordination for this project is required for the species identified above. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional consultation with the Service should take place before project implements any changes which are final or commits additional resources.

In addition to the species listed above, the following species and/or critical habitats may also occur in your project area and are not covered by this conclusion:

- Monarch Butterfly *Danaus plexippus* Candidate
- Northern Long-eared Bat *Myotis septentrionalis* Endangered
- Sandplain Gerardia *Agalinis acuta* Endangered

To complete consultation for species that have reached a "May Affect" determination and/or species may occur in your project area and are not covered by this conclusion, please visit the "New England Field Office Endangered Species Project Review and Consultation" website for step-by-step instructions on how to consider effects on these listed species and/or critical habitats, avoid and minimize potential adverse effects, and prepare and submit a project review package if necessary: https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review

Please Note: If the Action may impact bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-d) by the prospective permittee may be required. Please contact the Migratory Birds Permit Office, (413) 253-8643, or PermitsR5MB@fws.gov, with any questions regarding potential impacts to Eagles.

If you have any questions regarding this letter or need further assistance, please contact the New England Ecological Services Field Office and reference the Project Code associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

HYA Master Plan Improvements

2. Description

The following description was provided for the project 'HYA Master Plan Improvements':

> Multiple projects designed to improve airport safety and operational efficiency. Includes taxiway and runway work.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.67060375,-70.28808165919435,14z

QUALIFICATION INTERVIEW

1. As a representative of this project, do you agree that all items submitted represent the complete scope of the project details and you will answer questions truthfully?

   Yes

2. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed species?

   Note: This question could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered, or proposed species.

   No

3. Is the action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Yes

4. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) the lead agency for this project?

   No

5. Are you including in this analysis all impacts to federally listed species that may result from the entirety of the project (not just the activities under federal jurisdiction)?

   Note: If there are project activities that will impact listed species that are considered to be outside of the jurisdiction of the federal action agency submitting this key, contact your local Ecological Services Field Office to determine whether it is appropriate to use this key. If your Ecological Services Field Office agrees that impacts to listed species that are outside the federal action agency's jurisdiction will be addressed through a separate process, you can answer yes to this question and continue through the key.

   Yes

6. Are you the lead federal action agency or designated non-federal representative requesting concurrence on behalf of the lead Federal Action Agency?

   Yes

7. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)?

   No

8. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

   No

9. Will the proposed project involve the use of herbicide where listed species are present?

   No

10. Are there any caves or anthropogenic features suitable for hibernating or roosting bats within the area expected to be impacted by the project?

    No

11. Does any component of the project associated with this action include structures that may pose a collision risk to **birds** (e.g., land-based or offshore wind turbines, communication towers, high voltage transmission lines, any type of towers with or without guy wires)?

    Note: For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

    No

12. Does any component of the project associated with this action include structures that may pose a collision risk to **bats** (e.g., land-based wind turbines)?

    Note: For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

    No

13. Will the proposed project result in permanent changes to water quantity in a stream or temporary changes that would be sufficient to result in impacts to listed species?

    For example, will the proposed project include any activities that would alter stream flow, such as water withdrawal, hydropower energy production, impoundments, intake structures, diversion structures, and/or turbines? Projects that include temporary and limited water reductions that will not displace listed species or appreciably change water availability for listed species (e.g. listed species will experience no changes to feeding, breeding or sheltering) can answer "No". Note: This question refers only to the amount of water present in a stream, other water quality factors, including sedimentation and turbidity, will be addressed in following questions.

    No

14. Will the proposed project affect wetlands where listed species are present?

    This includes, for example, project activities within wetlands, project activities within 300 feet of wetlands that may have impacts on wetlands, water withdrawals and/or discharge of contaminants (even with a NPDES).

    Yes

15. Will the proposed project activities (including upland project activities) occur within 0.5 miles of the water's edge of a stream or tributary of a stream where listed species may be present?

    No

16. Will the proposed project directly affect a streambed (below ordinary high water mark (OHWM)) of the stream or tributary where listed species may be present?

    No

17. Will the proposed project bore underneath (directional bore or horizontal directional drill) a stream where listed species may be present?

    No

18. Will the proposed project involve a new point source discharge into a stream or change an existing point source discharge (e.g., outfalls; leachate ponds) where listed species may be present?

    No

19. Will the proposed project involve the removal of excess sediment or debris, dredging or in-stream gravel mining where listed species may be present?

    No

20. Will the proposed project involve the creation of a new water-borne contaminant source where listed species may be present?

    Note New water-borne contaminant sources occur through improper storage, usage, or creation of chemicals. For example: leachate ponds and pits containing chemicals that are not NSF/ANSI 60 compliant have contaminated waterways. Sedimentation will be addressed in a separate question.

    No

21. Will the proposed project involve perennial stream loss, in a stream of tributary of a stream where listed species may be present, that would require an individual permit under 404 of the Clean Water Act?

    No

22. Will the proposed project involve blasting where listed species may be present?

    No

23. Will the proposed project include activities that could negatively affect fish movement temporarily or permanently (including fish stocking, harvesting, or creation of barriers to fish passage).

    No

24. Will the proposed project involve earth moving that could cause erosion and sedimentation, and/or contamination along a stream or tributary of a stream where listed species may be present?

    Note: Answer "Yes" to this question if erosion and sediment control measures will be used to protect the stream.

    No

25. Will earth moving activities result in sediment being introduced to streams or tributaries of streams where listed species may be present through activities such as, but not limited to, valley fills, large-scale vegetation removal, and/or change in site topography?

    No

26. Will the proposed project involve vegetation removal within 200 feet of a perennial stream bank where aquatic listed species may be present?

    No

27. Will erosion and sedimentation control Best Management Practices (BMPs) associated with applicable state and/or Federal permits, be applied to the project? If BMPs have been provided by and/or coordinated with and approved by the appropriate Ecological Services Field Office, answer "Yes" to this question.

    Yes

28. Is the project being funded, lead, or managed in whole or in part by U.S Fish and Wildlife Restoration and Recovery Program (e.g., Partners, Coastal, Fisheries, Wildlife and Sport Fish Restoration, Refuges)?

    No

29. [Semantic] Does the project intersect the Virginia big-eared bat critical habitat?

    Automatically answered
    No

30. [Semantic] Does the project intersect the Indiana bat critical habitat?

    Automatically answered
    No

31. Will all activities occur within an area that is paved, graveled, routinely maintained, and/or inside a structure?

    No

32. Will the proposed project involve temporary or permanent modification to hydrology, including groundwater recharge, that could result in changes to water quality, water quantity, or timing of water availability in proximity to listed plants?

    Yes

33. Will the proposed project involve herbaceous native vegetation removal (including prescribed fire that would result in the burning of plants) or mowing?

    Yes

34. Will the proposed project involve ground disturbance?

    Yes

35. [Hidden Semantic] Does the project intersect the American Chaffseed AOI?

    Automatically answered
    Yes

36. Does the project occur within suitable habitat for American chaffseed? American chaffseed occurs in sandy (sandy peat, sandy loam), acidic, seasonally moint to dry soils. The species is generally found in habitats described as pine flatwoods, fire-maintained savannas, ecotonal areas between peaty wetlands and xeric sandy soils, and other open grass-sedge systems.

    No

37. [Semantic] Does the project intersect the candy darter critical habitat?

    Automatically answered
    No

38. [Semantic] Does the project intersect the diamond darter critical habitat?

    Automatically answered

    No

39. [Semantic] Does the project intersect the Big Sandy crayfish critical habitat?

    Automatically answered

    No

40. [Hidden Semantic] Does the project intersect the Guyandotte River crayfish critical habitat?

    Automatically answered

    No

41. Do you have any other documents that you want to include with this submission?

    No

PROJECT QUESTIONNAIRE

1. Approximately how many acres of trees would the proposed project remove?

   5

2. Approximately how many total acres of disturbance are within the disturbance/ construction limits of the proposed project?

   100

3. Briefly describe the habitat within the construction/disturbance limits of the project site.

   mowed grassland, shrubby scrub areas, forested areas

IPAC USER CONTACT INFORMATION

Agency: Epsilon Associates
Name: Alyssa Jacobs
Address: 3 Mill & Main Place Suite 250
City: Maynard
State: MA
Zip: 01754
Email ajacobs@epsilonassociates.com
Phone: 9784616271

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Aviation Administration

Appendix J

Environmental Justice Package

Environmental Justice Screening Form

Project Name	**Cape Cod Gateway Airport Master Plan Projects**
Anticipated Date of MEPA Filing	**November/December 2022**
Proponent Name	**Cape Cod Gateway Airport**
Contact Information (e.g., consultant)	**Alyssa Jacobs** **Epsilon Associates, Inc.** **3 Mill & Main, Suite 250** **Maynard, MA 01754** **Phone: 978-897-7100** **Email: ajacobs@epsilonassociates.com** **Project Email: enviroHYA@epsilonassociates.com**
Public website for project or other physical location where project materials can be obtained (if available)	https://flyhya.com/environmental-assessment/
Municipality and Zip Code for Project (if known)	**Hyannis, MA, 02601**
Project Type* (list all that apply)	**Airport**
Is the project site within a mapped 100-year FEMA flood plain? Y/N/ unknown	**N**
Estimated GHG emissions of conditioned spaces (click **here** for GHG Estimation tool)	Terminal building enhancements GHG estimates: 24,400 sq. ft. additional space proposed 6.4 lbs. CO_2/sf-yr. / 78 tons per year

Project Description

1. Provide a brief project description, including overall size of the project site and square footage of proposed buildings and structures if known.

The Proponent proposes several improvements to the Cape Cod Gateway Airport as detailed in the 2020 Master Plan over the next 5-8 years including

- **Extending both ends of Runway 15-33. The Runway 15 end would be lengthened by approximately 895 feet and the Runway 33 end would be lengthened by approximately 400 feet.**
- **Installing an approximately 200-foot by 400-foot engineered material arresting system (EMAS) to the Runway 24 end.**
- **Extending Taxiway A to meet the standards of a full-length parallel taxiway to Runway 15-33.**
- **Constructing a partial parallel taxiway with a 400-foot standard separation east of Runway 15-33 from Taxiway B to existing Taxiway A1.**
- **Reconfiguring existing Taxiway D parallel to Runway 15-33.**
- **Constructing a run-up area along the north side of the proposed partial parallel**

Taxiway D and removing the existing Taxiway E run-up pit.

- **Removing Taxiway E.**
- **Expanding the existing terminal building for current and future demand.**
- **Airport aviation development areas (East Ramp and North Ramp).**
- **Easement Acquisition for existing and future airspace surfaces to control and remove obstruction as necessary for aviation safety and compliance with FAA standards.**

2. List anticipated MEPA review thresholds (301 CMR 11.03) (if known)

- **11.03(6)b(iii) Expansion of an existing runway at an airport.**
- **11.03(6)b(iv) Construction of a New taxiway at an airport.**
- **11.03(1)a(2). Creation of ten or more acres of impervious area.**

3. List all anticipated state, local and federal permits needed for the project (if known)

- **Massachusetts Department of Environmental Protection (MassDEP) Water Quality Certification (WQC) pursuant to Section 401 of the Clean Water Act**
- **Order of Conditions from Barnstable Conservation Commission**
- **Massachusetts General Permit pursuant to Section 404 of the Clean Water Act**
- **NPDES Construction General Permit**

4. Identify EJ populations and characteristics (Minority, Income, English Isolation) within 5 miles of project site (can attach map identifying 5-mile radius from EJ Maps Viewer in lieu of narrative)

The Proponent identified 15 Environmental Justice (EJ) Populations within 5 miles of the Project site (see Figure 1).

Block Group	Census Tract	County	Town	Criteria	Total Minority Population	Households with Language Isolation	Median Household Income
1	120.02	Barnstable	Yarmouth	Income	14.4%	6.5%	$49,875 (58.1% of the MA median)
1	121.01	Barnstable	Yarmouth	Minority	29.6%	0%	$67,258 (78.4% of the MA median)
3	121.01	Barnstable	Yarmouth	Income	13.4%	0%	$50,481 (58.8% of the MA median)
4	126.02	Barnstable	Barnstable	Minority	46.2%	9.5%	$57,750 (67.3% of the MA median)
3	126.02	Barnstable	Barnstable	Minority	43.1%	6.1%	$58,631 (68.3% of the MA median)
3	121.02	Barnstable	Yarmouth	Income	9.6%	0%	$53,750 (62.6% of the MA

							median)
1	121.02	Barnstable	Yarmouth	Income	15.7%	8.4%	$56,016 (65.3% of the MA median)
3	153	Barnstable	Barnstable	Minority and Income	29.6%	18.5%	$31,063 (36.2% of the MA median)
2	121.01	Barnstable	Yarmouth	Minority	33.2%	0%	$77,875 (90.7% of the MA median)
2	126.01	Barnstable	Barnstable	Minority	39.4%	2.1%	$81,364 (94.8% of the MA median)
1	126.02	Barnstable	Barnstable	Minority and Income	34.1%	2.6%	$38,125 (44.4% of the MA median)
2	126.02	Barnstable	Barnstable	Minority and Income	30.8%	23%	$49,958 (58.2% of the MA median)
2	153	Barnstable	Barnstable	Minority and Income	44.3%	3.7%	$26,339 (30.7% of the MA median)
3	125.02	Barnstable	Barnstable	Minority	48.7%	14.2%	$70,437 (82.1% of the MA median)
4	125.02	Barnstable	Barnstable	Minority	46.9%	19.4%	$66,438 (77.4% of the MA median)

Using the EJ Maps Viewer that identifies "Languages Spoken in Massachusetts", the Proponent found that there are eight tracts with 5% or more of the population who do not speak English very well within five miles of the Project site. These populations speak the following languages:

- **Portuguese or Portuguese Creole**

5. Identify any municipality or census tract meeting the definition of "vulnerable health EJ criteria" in the DPH EJ Tool located in whole or in part within a 1 mile radius of the project site

The Proponent identified two towns within one mile of the Project site: Barnstable and Yarmouth. Using the DPH EJ Tool, only one town was identified as potentially suffering from environmentally related health burdens:

- **Barnstable – Childhood Asthma**

6. Identify potential short-term and long-term environmental and public health impacts that may affect EJ Populations and any anticipated mitigation

The Project is anticipated to result in temporary air quality and noise impacts due to construction activities. However, these impacts are not anticipated to exacerbate any existing unfair or inequitable environmental or public health burden on the EJ populations in the DGA.

All impacts will be reviewed through MEPA and the various permitting programs and will be

appropriately mitigated in accordance with applicable regulations. No long-term environmental and public health impacts on EJ populations are anticipated as a result of the Project.

7. Identify project benefits, including "Environmental Benefits" as defined in 301 CMR 11.02, that may improve environmental conditions or public health of the EJ population

- **Provides new opportunities for commercial growth within an area zoned for commercial/industrial development.**
- **Contributes to the economy of the region.**
- **Provides significant new construction and long-term job opportunities.**
- **Improves operational safety and efficiency of the Airport.**
- **The Airport is reserving space on either side of the terminal to plan for electric aircraft charging for both GA and commercial aircraft.**
- **Electric vehicle charging and solar panels on vehicle awnings and hangars.**
- **Modified guidelines for construction to include initiatives for green development.**
- **Continued PFAS remediation efforts related to historic Airport operations.**

8. Describe how the community can request a meeting to discuss the project, and how the community can request oral language interpretation services at the meeting . Specify how to request other accommodations, including meetings after business hours and at locations near public transportation.

The Proponent is willing to meet with community members at times and locations that are convenient to the public. The Airport's consultant team includes community engagement specialists who will continue to provide outreach to EJ communities and neighboring communities using the following methods: postcard mailings, a dedicated website for updates https://flyhya.com/environmental-assessment/and documents related to the Projects, several in-person community meetings (in addition to regulatory meetings), and pop-up information events in the community (e.g., at the library).

A community meeting is scheduled for October 27, 2022, at 6 PM at the Cape Cod Gateway Airport.

To request additional meetings and any needed accommodations (including oral language interpretation services), please contact the project email address: enviroHYA@epsilonassociates.com

Formulário de Triagem de Justiça Ambiental

Nome do projeto	**Cape Cod Gateway Airport Master Plan Projects (Projetos do Plano Diretor do Aeroporto Cape Cod Gateway)**
Data prevista do requerimento MEPA	**Novembro/dezembro de 2022**
Nome do proponente	**Cape Cod Gateway Airport**
Informações de contato (p. ex., consultor)	**Alyssa Jacobs** **Epsilon Associates, Inc.** **3 Mill & Main, Suite 250** **Maynard, MA 01754** **Telefone: 978-897-7100** **E-mail: ajacobs@epsilonassociates.com** **E-mail do projeto: enviroHYA@epsilonassociates.com**
Site público do projeto ou outro local físico onde os materiais do projeto podem ser obtidos (se disponível)	https://flyhya.com/environmental-assessment/
Município e código postal do projeto (se conhecidos)	**Hyannis, MA, 02601**
Tipo de projeto* (listar todos os que se aplicam)	**Aeroporto**
O local do projeto está dentro de uma planície de inundação de 100 anos mapeada da FEMA? S/N/desconhecido	**N**
Emissões de GEE estimadas de espaços condicionados (clique **aqui** para acessar a ferramenta de estimativa de GEE)	Estimativas de GEE para as melhorias ao edifício do terminal: 24.400 pés quadrados de espaço adicional proposto 6,4 lb. de CO2/pé quadrado-ano / 78 toneladas por ano

Descrição do projeto

1. Forneça uma breve descrição do projeto, incluindo o tamanho geral do local do projeto e a área dos edifícios e estruturas propostos, se conhecidos.

O Proponente propõe diversas melhorias ao Aeroporto Cape Cod Gateway, conforme detalhado no Plano Diretor de 2020, nos próximos 5–8 anos, incluindo

- **Extensão de ambas as extremidades da Pista 15–33. A extremidade da Pista 15 seria estendida em aproximadamente 895 pés e a extremidade da Pista 33 seria estendida em aproximadamente 400 pés.**
- **Instalação de um sistema de desaceleração com materiais projetados (EMAS, de engineered material arresting system) de aproximadamente 200 pés por 400 pés na extremidade da Pista 24.**
- **Extensão da Pista de Rolamento A para atender aos padrões de uma pista de rolamento paralela de comprimento total para a Pista 15-33.**
- **Construção de uma pista de rolamento paralela parcial com uma separação padrão**

de 400 pés a leste da Pista 15-33, da Pista de Rolamento B para a Pista de Rolamento A1 existente.

- **Reconfiguração da Pista de Rolamento D existente paralela à Pista 15-33.**
- **Construção de uma área de run-up ao longo do lado norte da Pista de Rolamento D paralela parcial proposta e remoção do poço de run-up da Pista de Rolamento E existente.**
- **Remoção da Pista de Rolamento E.**
- **Expansão do edifício do terminal existente para a demanda atual e futura.**
- **Áreas de desenvolvimento de aviação do aeroporto (Rampa Leste e Rampa Norte).**
- **Aquisição de servidão para superfícies de espaço aéreo existentes e futuras para controlar e remover obstruções conforme necessário para a segurança da aviação e conformidade com os padrões da FAA.**

2. Liste os limiares de análise do MEPA previstos (301 CMR 11.03) (se conhecidos)

- **11.03(6)b(iii) Ampliação de uma pista existente em um aeroporto.**
- **11.03(6)b(iv) Construção de uma nova pista de rolamento em um aeroporto.**
- **11.03(1)a(2). Criação de dez ou mais acres de área impermeável.**

3. Liste todas as licenças estaduais, locais e federais necessárias previstas para o projeto (se conhecidas)

- **Certificação de Qualidade da Água (WQC) do Departamento de Proteção Ambiental de Massachusetts (MassDEP) de acordo com a Seção 401 da Lei de Água Limpa**
- **Ordem de Condições da Comissão de Conservação de Barnstable**
- **Alvará Geral de Massachusetts de acordo com a Seção 404 da Lei de Água Limpa**
- **Alvará Geral de Construção do NPDES**

4. Identifique as populações e características de JA (justiça ambiental) (minoria, renda, isolamento do inglês) dentro de 5 milhas do local do projeto (pode-se anexar o mapa do EJ Maps Viewer identificando um raio de 5 milhas em vez de descrever).

O Proponente identificou 15 Populações de Justiça Ambiental (JA) dentro de 5 milhas do local do Projeto (ver Figura 1).

Grupo de quadras	Setor censitário	Condado	Cidade	Critérios	População minoritária total	Famílias com isolamento linguístico	Renda familiar mediana
1	120,02	Barnstable	Yarmouth	Renda	14,4%	6,5%	US$ 49.875 (58,1% da mediana de MA)
1	121,01	Barnstable	Yarmouth	Minoria	29,6%	0%	US$ 67.258 (78,4% da mediana de MA)

3	**121,01**	**Barnstable**	**Yarmouth**	**Renda**	**13,4%**	**0%**	**US$ 50.481 (58,8% da mediana de MA)**
4	**126,02**	**Barnstable**	**Barnstable**	**Minoria**	**46,2%**	**9,5%**	**US$ 57.750 (67,3% da mediana de MA)**
3	**126,02**	**Barnstable**	**Barnstable**	**Minoria**	**43,1%**	**6,1%**	**US$ 58.631 (68,3% da mediana de MA)**
3	**121,02**	**Barnstable**	**Yarmouth**	**Renda**	**9,6%**	**0%**	**US$ 53.750 (62,6% da mediana de MA)**
1	**121,02**	**Barnstable**	**Yarmouth**	**Renda**	**15,7%**	**8,4%**	**US$ 56.016 (65,3% da mediana de MA)**
3	**153**	**Barnstable**	**Barnstable**	**Minoria e renda**	**29,6%**	**18,5%**	**US$ 31.063 (36,2% da mediana de MA)**
2	**121,01**	**Barnstable**	**Yarmouth**	**Minoria**	**33,2%**	**0%**	**US$ 77.875 (90,7% da mediana de MA)**
2	**126,01**	**Barnstable**	**Barnstable**	**Minoria**	**39,4%**	**2,1%**	**US$ 81.364 (94,8% da mediana de MA)**
1	**126,02**	**Barnstable**	**Barnstable**	**Minoria e renda**	**34,1%**	**2,6%**	**US$ 38.125 (44,4% da mediana de MA)**
2	**126,02**	**Barnstable**	**Barnstable**	**Minoria e renda**	**30,8%**	**23%**	**US$ 49.958 (58,2% da mediana de MA)**
2	**153**	**Barnstable**	**Barnstable**	**Minoria e renda**	**44,3%**	**3,7%**	**US$ 26.339 (30,7% da mediana de MA)**
3	**125,02**	**Barnstable**	**Barnstable**	**Minoria**	**48,7%**	**14,2%**	**US$ 70.437 (82,1% da mediana de MA)**
4	**125,02**	**Barnstable**	**Barnstable**	**Minoria**	**46,9%**	**19,4%**	**US$ 66.438 (77,4% da mediana de MA)**

Usando o EJ Maps Viewer, que identifica os idiomas falados em Massachusetts, o Proponente determinou que existem oito setores com 5% ou mais da população que não fala inglês muito bem dentro de cinco milhas do local do Projeto. Essas populações falam os seguintes idiomas:

- **Português ou crioulo português**

5. Identifique qualquer município ou setor censitário que atenda à definição de "vulnerable health EJ criteria" (critérios de saúde vulnerável de JA) na Ferramenta DPH EJ localizado total ou parcialmente dentro de um raio de 1 milha do local do projeto

O Proponente identificou duas cidades dentro de uma milha do local do Projeto: Barnstable e Yarmouth. Usando a Ferramenta DPH EJ, apenas uma cidade foi identificada como potencialmente sofrendo de problemas de saúde relacionados ao meio ambiente:

- **Barnstable – asma infantil**

6. Identifique possíveis impactos ambientais e de saúde pública de curto e longo prazo que podem afetar as populações de JA e qualquer mitigação prevista

Prevê-se que o Projeto resulte em impactos temporários na qualidade do ar e ruído devido às atividades de construção. No entanto, não se prevê que esses impactos exacerbem qualquer ônus ambiental ou de saúde pública injusto ou desigual existente sobre as populações de JA na DGA. Todos os impactos serão analisados por meio do MEPA e dos vários programas de licenciamento e serão adequadamente mitigados de acordo com os regulamentos que se apliquem. Não são previstos impactos ambientais e de saúde pública de longo prazo nas populações de JA como resultado do Projeto.

7. Identifique os benefícios do projeto, incluindo "Benefícios Ambientais", conforme definição do 301 CMR 11.02, que podem melhorar as condições ambientais ou a saúde pública da população de JA.

- **Oferece novas oportunidades de crescimento comercial dentro de uma área de desenvolvimento comercial/industrial.**
- **Contribui para a economia da região.**
- **Fornece novas oportunidades de emprego na construção e de longo prazo significativas.**
- **Melhora a eficiência e segurança operacional do aeroporto.**
- **O aeroporto está reservando espaço em ambos os lados do terminal para o planejamento de carregamento de aeronaves elétricas para aeronaves de aviação geral e comerciais.**
- **Carregamento de veículos elétricos e painéis solares em hangares e toldos de veículos.**
- **Diretrizes modificadas para construção a fim de incluir iniciativas de desenvolvimento ecológico.**
- **Esforços contínuos de remediação de PFAS relacionados às operações históricas do aeroporto.**

8. Descreva como a comunidade pode solicitar uma reunião para discutir o projeto e como a comunidade pode solicitar serviços de interpretação oral na reunião. Especifique como solicitar outras adaptações, incluindo reuniões fora do horário comercial e em locais próximos ao transporte público.

O Proponente está disposto a se reunir com os membros da comunidade em horários e locais que sejam convenientes para o público. A equipe de consultores do aeroporto inclui especialistas em engajamento da comunidade que continuarão a atender as comunidades de JA e as comunidades vizinhas usando os seguintes métodos: correspondências postais, um site dedicado para atualizações https://flyhya.com/environmental-assessment/ e documentos relacionados aos Projetos, várias reuniões comunitárias presenciais (além de reuniões regulatórias) e eventos pop-up informativos na comunidade (p. ex., na biblioteca).

Uma reunião comunitária está agendada para 27 de outubro de 2022, às 18h, no Aeroporto Cape Cod Gateway.

Para solicitar reuniões adicionais e quaisquer acomodações necessárias (incluindo serviços de interpretação oral), entre em contato pelo endereço de e-mail do projeto: enviroHYA@epsilonassociates.com

Formulario de Investigación de Justicia Ambiental

Nombre del proyecto	**Proyectos del Plan Maestro del Aeropuerto Cape Cod Gateway**
Fecha prevista de la presentación ante la MEPA	**Noviembre/Diciembre de 2022**
Nombre del proponente	**Aeropuerto Cape Cod Gateway**
Información de contacto (por ej., consultor)	**Alyssa Jacobs** **Epsilon Associates, Inc.** **3 Mill & Main, Suite 250** **Maynard, MA 01754** **Teléfono:978-897-7100** **Correo electrónico:ajacobs@epsilonassociates.com** **Correo electrónico del proyecto:** **enviroHYA@epsilonassociates.com**
Sitio web público u otra ubicación física donde se pueden obtener los materiales del proyecto (si están disponibles)	https://flyhya.com/environmental-assessment/
Municipalidad y código postal del proyecto (si se conocen)	**Hyannis, MA, 02601**
Tipo de proyecto* (enumere todos los que correspondan)	**Aeropuerto**
¿El sitio del proyecto se encuentra dentro de una llanura aluvial de la FEMA con 100 años y mapeada? S/N/No se sabe	**N**
Emisiones de gases con efecto invernadero (GEI) estimadas de los espacios acondicionados (haga clic **aquí** para obtener la herramienta de estimación de GEI)	Estimaciones de GEI de las mejoras del edificio de la terminal: 24 400 pies cuadrados (2230 m²) de espacio adicional propuesto 6,4 lb (2,9 kg) CO2/sf-año / 78 toneladas por año

Descripción del proyecto

1. Brinde una breve descripción del proyecto, incluyendo el tamaño general del sitio del proyecto y la superficie cuadrada de los edificios y las estructuras propuestos, si se conocen.
   El Proponente propone varias mejoras al Aeropuerto Cape Cod Gateway, como se detalla en el Plan Maestro 2020, durante los próximos 5 a 8 años, que incluyen
   - **Ampliación de ambos extremos de las Pistas 15-33. El extremo de la Pista 15 se alargaría aproximadamente 895 pies (270 m) y el extremo de la Pista 33 se alargaría aproximadamente 400 pies (122 m).**
   - **Instalación de un sistema de frenado de emergencia de umbral de pista (Engineered Material Arresting System - EMAS) de aproximadamente 200 pies (60 m) por 400 pies (120 m) al extremo de la Pista 24.**

- **Ampliación de la Calle de Rodaje A para cumplir con los estándares de una calle de rodaje de longitud completa paralela a la Pista 15-33.**
- **Construcción de una calle de rodaje paralela parcial con una separación estándar de 400 pies (120 m) al este de la Pista 15-33 desde la Calle de Rodaje B hasta la Calle de Rodaje A1 existente.**
- **Reconfiguración de la Calle de Rodaje D existente paralela a la Pista 15-33.**
- **Construcción de un área de rodaje a lo largo del lado norte de la Calle de Rodaje D paralela parcial propuesta y eliminación del área de verificación de la Calle de Rodaje E existente.**
- **Eliminación de la Calle de Rodaje E.**
- **Ampliación del edificio terminal existente para la demanda actual y futura.**
- **Áreas de desarrollo aeronáutico del aeropuerto (Rampa Este y Rampa Norte).**
- **Adquisición de servidumbre para superficies de espacio aéreo existentes y futuras para controlar y eliminar obstrucciones según sea necesario para la seguridad de la aviación y el cumplimiento de los estándares de la FAA.**

2. Enumere los umbrales de revisión previstos de la MEPA (301 CMR 11.03) (si se conocen)

- **11.03(6)b(iii) Ampliación de una pista existente en un aeropuerto.**
- **11.03(6)b(iv) Construcción de una nueva Calle de Rodaje en un aeropuerto.**
- **11.03(1)a(2). Creación de 5 o más acres (2 o más hectáreas) de área impermeable.**

3. Enumere todos los permisos estatales, locales y federales previstos que se necesitan para el proyecto (si se conocen)

- **Certificación de calidad del agua (WQC) del Departamento de Protección Ambiental de Massachusetts (MassDEP), de conformidad con la Sección 401 de la Ley de Agua Limpia**
- **Orden de Condiciones de la Comisión de Conservación Barnstable**
- **Permiso General de Massachusetts conforme a la Sección 404 de la Ley de Agua Limpia**
- **Permiso General de Construcción NPDES**

4. Identifique a las poblaciones de Justicia Ambiental (EJ) y las características (minoría, ingresos, aislamiento del inglés) dentro de las 5 millas (8 km) del sitio del proyecto (puede adjuntar un mapa que identifique el radio de 5 millas del EJ Maps Viewer en vez de hacer la descripción textual)

El Proponente identificó 15 poblaciones de Justicia Ambiental (EJ) dentro de las 5 millas (8 km) del sitio del proyecto (Figura 1).

Grupo de cuadras	Área de censo	Condado	Ciudad	Criterios	Población minoritaria total	Hogares con aislamiento idiomático	Ingresos promedio del hogar
1	120,02	Barnstable	Yarmouth	Ingresos	14,4%	6,5%	USD 49 875

							(58,1 % del promedio de MA)
1	121,01	Barnstable	Yarmouth	Minoría	29,6%	0%	USD 67.258 875 (78,4 % del promedio de MA)
3	121,01	Barnstable	Yarmouth	Ingresos	13,4%	0%	USD 50.481 875 (58,8 % del promedio de MA)
4	126,02	Barnstable	Barnstable	Minoría	46,2%	9,5%	USD 57.750 875 (67,3 % del promedio de MA)
3	126,02	Barnstable	Barnstable	Minoría	43,1%	6,1%	USD 58.631 875 (68,3 % del promedio de MA)
3	121,02	Barnstable	Yarmouth	Ingresos	9,6%	0%	USD 53.750 875 (62,6 % del promedio de MA)
1	121,02	Barnstable	Yarmouth	Ingresos	15,7%	8,4%	USD 56.016 875 (65,3 % del promedio de MA)
3	153	Barnstable	Barnstable	Minoría e ingresos	29,6%	18,5%	USD 31.063 875 (36,2 % del promedio de MA)
2	121,01	Barnstable	Yarmouth	Minoría	33,2%	0%	USD 77.875 875 (90,7 % del promedio de MA)
2	126,01	Barnstable	Barnstable	Minoría	39,4%	2,1%	USD 81.364 875 (94,8 % del promedio de MA)
1	126,02	Barnstable	Barnstable	Minoría e ingresos	34,1%	2,6%	USD 38.125 875 (44,4 % del promedio de MA)
2	126,02	Barnstable	Barnstable	Minoría e ingresos	30,8%	23%	USD 49.958 875 (58,2 % del promedio de MA)
2	153	Barnstable	Barnstable	Minoría e ingresos	44,3%	3,7%	USD 26.339 875 (30,7 % del promedio de MA)
3	125,02	Barnstable	Barnstable	Minoría	48,7%	14,2%	USD 70.437 875 (82,1 % del

							promedio de MA)
4	**125,02**	**Barnstable**	**Barnstable**	**Minoría**	**46,9%**	**19,4%**	**USD 66.438 875 (77,4 % del promedio de MA)**

Usando el EJ Maps Viewer que identifica los "Idiomas hablados en Massachusetts", el Proponente descubrió que hay 8 grupos donde 5 % o más de la población no habla inglés muy bien y se encuentran dentro de cinco millas (8 km) del lugar del proyecto.Estas poblaciones hablan los siguientes idiomas:

- **portugués o lenguas criollas de base portugués**

5. Identifique a cualquier municipalidad o área de censo que corresponda a la definición de "criterios de EJ sobre vulnerabilidad sanitaria" en la DPH EJ Tool ubicada en su totalidad o en parte dentro de un radio de 1 milla (1,6 km) del sitio del proyecto

El Proponente identificó dos municipalidades dentro de una milla del lugar del proyecto:Barnstable y Yarmouth. Usando la herramienta DPH EJ, solo se identificó una ciudad que podría sufrir problemas de salud relacionados con el medio ambiente:

- **Barnstable: asma infantil**

6. Identifique el impacto potencial a corto y largo plazo en la salud pública y el medio ambiente que pueda afectar a las poblaciones de EJ y cualquier mitigación prevista

Se prevé que el Proyecto resulte en impactos temporales en la calidad del aire y el ruido debido a las actividades de construcción. Sin embargo, no se anticipa que estos impactos exacerben ninguna carga ambiental o de salud pública injusta o inequitativa existente en las poblaciones de JA en la DGA.

Todo el impacto se revisará con la MEPA y los diversos programas de permisos y se mitigará según corresponda con las regulaciones aplicables.No se anticipan impactos ambientales y de salud pública a largo plazo en las poblaciones de EJ como resultado del Proyecto.

7. Identifique los beneficios del proyecto, incluidos los "Beneficios ambientales" según se definen en 301 CMR 11.02, que podrían mejorar las condiciones ambientales o la salud pública de la población de la EJ

- **Brinda nuevas oportunidades para el crecimiento comercial dentro de un área zonificada para desarrollo comercial/industrial.**
- **Contribuye a la economía de la región.**
- **Proporciona nuevas construcciones significativas y oportunidades de trabajo a largo plazo.**
- **Mejora la seguridad operativa y la eficiencia del Aeropuerto.**
- **El Aeropuerto está reservando espacio a ambos lados de la terminal para planificar la carga de aviones eléctricos, tanto para aviación general como comercial.**
- **Recarga de vehículos eléctricos y placas solares en techos de cobertura para vehículos y hangares.**

- **Directrices modificadas para la construcción para incluir iniciativas para el desarrollo verde.**
- **Esfuerzos continuos de remediación de PFAS relacionadas con las operaciones históricas del aeropuerto.**

8. Describa cómo la comunidad puede solicitar una reunión para comentar el proyecto y cómo puede solicitar servicios de interpretación oral en la reunión. Especifique cómo solicitar otras adaptaciones, incluidas reuniones después del horario comercial y en lugares cercanos al transporte público.

El Proponente está dispuesto a reunirse con los miembros de la comunidad en los lugares y a las horas que sean convenientes para el público. El equipo de consultores del Aeropuerto incluye especialistas en participación comunitaria que continuarán brindando servicios de extensión a las comunidades de EJ y comunidades vecinas utilizando los siguientes métodos: envíos postales, un sitio web dedicado para actualizaciones https://flyhya.com/evaluacion-ambiental/y documentos relacionados con los Proyectos, varias reuniones comunitarias en persona (además de las reuniones reglamentarias) y eventos temporales de información para la comunidad (p. ej., en la biblioteca).

Una reunión comunitaria está programada para el 27 de octubre de 2022 a las 6 p. m. en el Aeropuerto Cape Cod Gateway.

Para solicitar reuniones adicionales y cualquier adaptación necesaria (incluidos los servicios de interpretación de idiomas oral), comuníquese con la dirección de correo electrónico del proyecto: enviroHYA@epsilonassociates.com

Statewide Environmental Justice Community Based Organizations

First Name	Last Name	Title	Phone	Email	Affiliation
Julia	Blatt	Executive Director	(617) 714-4272	danielledolan@massriversalliance.org juliablatt@massriversalliance.org	Mass Rivers Alliance
Elvis	Mendez	Associate Director	508-505-6748	elvis@n2nma.org	Neighbor to Neighbor
Ben	Hellerstein	MA State Director	617-747-4368	ben@environmentmassachusetts.org	Environment Massachusetts
Claire	B.W. Muller	Movement Building Director	508 308-9261	claire@uumassaction.org	Unitarian Universalist Mass Action Network
Cindy	Luppi	New England Director	617-338-8131 x208	cluppi@cleanwater.org	Clean Water Action
Deb	Pasternak	Director, MA Chapter	617-423-5775	deb.pasternak@sierraclub.org	Sierra Club MA
Heather	Clish	Director of Conservation & Recreation Policy	(617) 523-0655	hclish@outdoors.org	Appalachian Mountain Club
Heidi	Ricci	Director of Policy	Not Provided	hricci@massaudubon.org	Mass Audubon
Kelly	Boling	MA & RI State Director	(617) 367-6200	kelly.boling@tpl.org	The Trust for Public Land
Kerry	Bowie	Board President	Not Provided	kerry@msaadapartners.com	Browning the GreenSpace
Nancy	Goodman	Vice President for Policy	Not Provided	ngoodman@environmentalleague.org	Environmental League of MA
Rob	Moir	Executive Director	Not Provided	rob@oceanriver.org	Ocean River Institute
Robb	Johnson	Executive Director	(978) 443-2233	robb@massland.org	Mass Land Trust Coalition
Staci	Rubin	Senior Attorney	617 350-0990	srubin@clf.org	Conservation Law Foundation
Sylvia	Broude	Executive Director	617 292-4821	sylvia@communityactionworks.org	Community Action Works

Indigenous Organizations

First Name	Last Name	Title	Phone	Email	Affiliation
Alma	Gordon	President	Not Provided	tribalcouncil@chappaquiddickwampanoag.org	Chappaquiddick Tribe of the Wampanoag Nation
Cheryll	Toney Holley	Chair	774-317-9138	crwritings@aol.com	Nipmuc Nation (Hassanamisco Nipmucs)
John	Peters, Jr.	Executive Director	617-573-1292	john.peters@mass.gov	Massachusetts Commission on Indian Affairs (MCIA)
Kenneth	White	Council Chairman	508-347-7829	acw1213@verizon.net	Chaubunagungamaug Nipmuck Indian Council
Melissa	Ferretti	Chair	(508) 304-5023	melissa@herringpondtribe.org	Herring Pond Wampanoag Tribe
Patricia	D. Rocker	Council Chair	Not Provided	rockerpatriciad@verizon.net	Chappaquiddick Tribe of the Wampanoag Nation, Whale Clan
Raquel	Halsey	Executive Director	(617) 232-0343	rhalsey@naicob.org	North American Indian Center of Boston
Cora	Pierce	Not Provided	Not Provided	Coradot@yahoo.com	Pocassett Wampanoag Tribe
Elizabth	Soloman	Not Provided	Not Provided	Solomon.Elizabeth@gmail.com	Massachusetts Tribe at Ponkapoag

Federally Recognized Tribes

First	Last	Title	Phone	Email	Affiliation	Notes
Bettina	Washington	Tribal Historic Preservation Officer	508-560-9014	thpo@wampanoagtribe-nsn.gov	Wampanoag Tribe of Gay Head (Aquinnah)	
Stockbridge-Munsee Tribe		Historic Preservation Manager	413-884-6048	THPO@Mohican-nsn.gov	Stockbridge-Munsee Tribe	**Only for projects in: Berkshire County, Agawam, Amherst, Athol, Charlemont,Chicopee, Easthampton, Gardner, Greenfield, Hadley, Heath, Hubbardston, Ludlow, Monroe, Northampton, Orange, Palmer, Rowe, Royalston, Southwick, Springfield, Sunderland, Ware, Wendell, West Springfield, Westfield**
Brian	Weeden	Chair	774-413-0520	Brian.Weeden@mwtribe-nsn.gov	Mashpee Wampanoag Tribe	

First Name	Last Name	Title	Service Area	Phone Number	Email	Affiliation
Barry	Margolin	Chair, Policy & Program Committee	Hyannis	Not provided	info@capecodclimate.org	Cape Cod Climate Change Collaborative
Kristina	Dower	Executive Director	Hyannis	508-771-1727	info@cacci.cc	Community Action Committee of Cape Cod & Islands

Appendix K

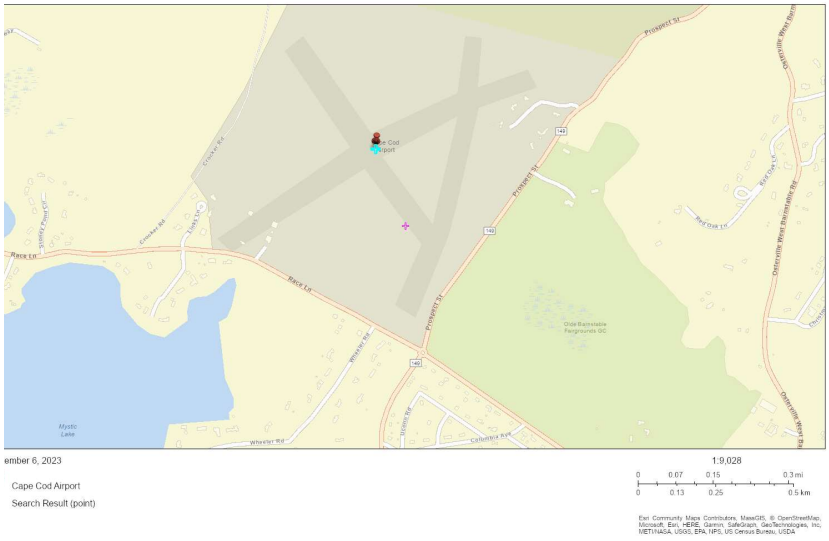
EJ Screen Community Report

EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Barnstable Town, MA

1 mile Ring Centered at 41.687505,-70.403409
Population: 582
Area in square miles: 3.14



COMMUNITY INFORMATION

- Low income: 19 percent
- People of color: 1 percent
- Less than high school education: 3 percent
- Limited English households: 0 percent
- Unemployment: 5 percent
- Persons with disabilities: 9 percent
- Male: 52 percent
- Female: 48 percent
- 82 years — Average life expectancy
- $59,352 — Per capita income
- Number of households: 222
- Owner occupied: 90 percent

BREAKDOWN BY RACE

- White: 99%
- Black: 0%
- Asian: 0%
- Hispanic: 0%
- American Indian: 0%
- Hawaiian/Pacific Islander: 0%
- Other race: 0%
- Two or more races: 0%

BREAKDOWN BY AGE

From Ages 1 to 4	2%
From Ages 1 to 18	13%
From Ages 18 and up	87%
From Ages 65 and up	20%

LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	98%
French, Haitian, or Cajun	1%
Other Indo-European	2%
Total Non-English	2%

LIMITED ENGLISH SPEAKING BREAKDOWN

Speak Spanish	0%
Speak Other Indo-European Languages	0%
Speak Asian-Pacific Island Languages	0%
Speak Other Languages	0%

Notes: Numbers may not sum to totals due to rounding. Hispanic popultion can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

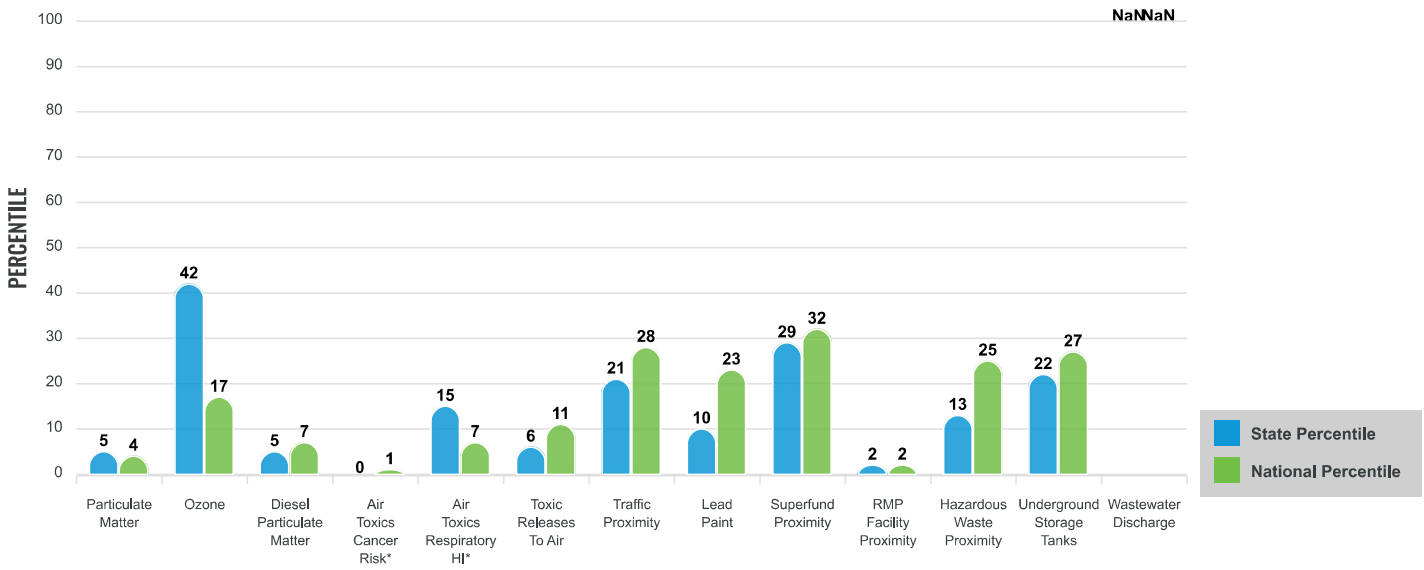
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

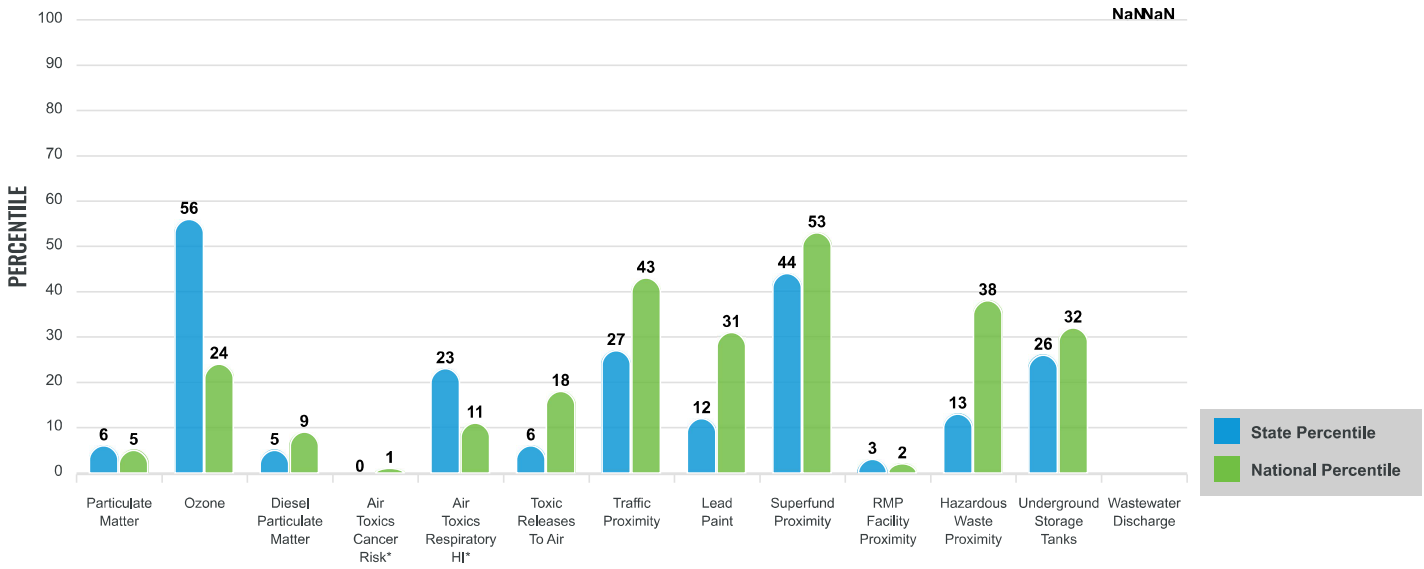
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for 1 mile Ring Centered at 41.687505,-70.403409

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter (µg/m^3)	5.58	6.62	5	8.08	5
Ozone (ppb)	58.8	58.3	62	61.6	30
Diesel Particulate Matter (µg/m^3)	0.0835	0.253	4	0.261	11
Air Toxics Cancer Risk* (lifetime risk per million)	10	21	0	25	1
Air Toxics Respiratory HI*	0.2	0.26	2	0.31	4
Toxic Releases to Air	78	2,800	6	4,600	21
Traffic Proximity (daily traffic count/distance to road)	82	630	23	210	51
Lead Paint (% Pre-1960 Housing)	0.13	0.51	9	0.3	39
Superfund Proximity (site count/km distance)	0.093	0.18	45	0.13	64
RMP Facility Proximity (facility count/km distance)	0.023	0.36	2	0.43	2
Hazardous Waste Proximity (facility count/km distance)	0.31	6.7	10	1.9	43
Underground Storage Tanks (count/km^2)	0.32	3.4	20	3.9	35
Wastewater Discharge (toxicity-weighted concentration/m distance)	N/A	0.2	N/A	22	N/A
SOCIOECONOMIC INDICATORS					
Demographic Index	10%	26%	20	35%	9
Supplemental Demographic Index	9%	12%	43	14%	26
People of Color	1%	30%	0	39%	0
Low Income	19%	22%	55	31%	35
Unemployment Rate	5%	5%	59	6%	58
Limited English Speaking Households	0%	6%	0	5%	0
Less Than High School Education	3%	9%	34	12%	24
Under Age 5	2%	5%	28	6%	24
Over Age 64	20%	17%	66	17%	66
Low Life Expectancy	16%	17%	30	20%	18

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	0
Water Dischargers	0
Air Pollution	0
Brownfields	0
Toxic Release Inventory	0

Other community features within defined area:

Schools	0
Hospitals	0
Places of Worship	0

Other environmental data:

Air Non-attainment	Yes
Impaired Waters	Yes

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	No
Selected location contains an EPA IRA disadvantaged community	No

Report for 1 mile Ring Centered at 41.687505,-70.403409

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	16%	17%	30	20%	18
Heart Disease	5.7	5.4	63	6.1	44
Asthma	10.5	10.8	48	10	69
Cancer	7.5	6.6	71	6.1	81
Persons with Disabilities	10.2%	11.9%	42	13.4%	33

CLIMATE INDICATORS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	5%	12%	31	12%	40
Wildfire Risk	0%	0%	0	14%	0

CRITICAL SERVICE GAPS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	1%	10%	16	14%	12
Lack of Health Insurance	2%	3%	45	9%	11
Housing Burden	No	N/A	N/A	N/A	N/A
Transportation Access	No	N/A	N/A	N/A	N/A
Food Desert	No	N/A	N/A	N/A	N/A

Footnotes

Report for 1 mile Ring Centered at 41.687505,-70.403409

Appendix L

Stormwater Pollution Prevention Plan (2021)

Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A, Unit #1 • Sandwich, MA • 02563
Phone - 508-833-6600 • Fax - 508-833-3150 • *www.horsleywitten.com*

Stormwater Pollution Prevention Plan

Cape Cod Gateway Airport
Hyannis, Massachusetts

Revision 9, May 2021

Prepared for:
Cape Cod Gateway Airport
480 Barnstable Road Hyannis,
Massachusetts 02601

Prepared by:
Horsley Witten Group, Inc.

STORMWATER POLLUTION PREVENTION PLAN
CAPE COD GATEWAY AIRPORT
HYANNIS, MASSACHUSETTS

PREFACE I - FACILITY CERTIFICATION

The following certification statement must be signed and dated by a person meeting the requirements of Appendix B, subsection 11 of the 2021 MSGP. In the event of a revision or modification to this SWPPP, the certification must be re-signed, a record of changes is included as Appendix C.

The undersigned certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Operator:	Certifier / Position:	Signature:	Date:
Cape Cod Gateway Airport	Katie Servis Airport Manager		
Cape Air / Nantucket Airlines	Peter Farrell Director - Supply Chain		
Griffin Avionics	Robert Griffin Facility Manager		
Rectrix Aerodrome Centers, Inc.	Helyne Mederios General Manager		
Hertz Car Rental	John Cahill Manager		
Allies Air	Jody Lewis Office/Freight Manager		
Avis Car Rental	Stephanie Arias Facility Manager		
AMA Marine Lumber	Ed Usowicz		
Cape Flight Instruction	Edmund Cottle		

STORMWATER POLLUTION PREVENTION PLAN
CAP COD GATEWAY AIRPORT
HYANNIS, MASSACHUSETTS
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STORMWATER POLLUTION PREVENTION PLAN
CAPE COD GATEWAY AIRPORT
HYANNIS, MASSACHUSETTS
MAR053164

1.0 INTRODUCTION

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared on behalf of the Cape Cod Gateway Airport (the Airport), formerly known as the Barnstable Municipal Airport, in accordance with the requirements for the Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) Stormwater Multi-Sector General Permit (MSGP). On January 15, 2021, EPA announced publication of the 2021 MSGP (Appendix A). This permit replaced the 2015 MSGP, which expired on June 30, 2020 and was administratively continued until the 2021 MSGP was issued. The 2021 MSGP provides coverage for industrial facilities located in five States, and in certain Indian Country lands, as well as at various Federal Facilities in other States where EPA remains the NPDES permit authority.

The 2021 MSGP specifies steps that facility operators must take prior to becoming eligible for permit coverage, including submitting a Notice of Intent (NOI), implementing measures to minimize pollutants in stormwater runoff, and developing a SWPPP. Under the 2008 MSGP, the Airport's stormwater discharges were authorized under permit MAR05CY29. This SWPPP has been prepared to reflect current Airport and tenant operations, and replaces the Airport's existing SWPPP, dated November 18, 1999, revised March 8, 2002, November 18, 2003, December 22, 2009, December 16, 2013, December 2015, and April 2020. The Airport filed a NOI for stormwater discharges under the 2021 MSGP on May 30, 2021, designated as permit MAR053164, and included as Appendix B, along with supporting documentation for the Endangered and Threatened Species and Critical Habitat evaluation required under section 1.1.4 of the 2021 MSGP. A USGS Locus and Site Map are included as Figures 1 and 2, respectively.

In accordance with NPDES permit classifications, Cape Cod Gateway Airport is designated as Standard Classification Code (SIC) 4581, "Airports, flying fields, and Terminal Services", Sector S "Air Transportation Facilities." This SWPPP is designed to assist the Airport in identifying potential sources of stormwater pollutants on Airport property and minimizing or eliminating the potential for those pollutants to enter stormwater discharges from the airport. The SWPPP describes the existing stormwater drainage system, identifies potential pollutant sources and locations, and best management procedures (BMPs) and controls for the prevention of stormwater pollution, and establishes reporting and annual monitoring requirements.

This SWPPP provides information critical to the prevention of stormwater pollution at the Airport, and includes discussions of both tenant and Airport operations, potential pollutants associated with those activities, and potential pollutant storage facilities.

2.0 FACILITY CERTIFICATION

Facility Certification of this Plan is provided in Preface I to this Plan. The facility certification statement must be signed and dated by a person meeting the requirements of Appendix B, subsection 11 of the 2021 MSGP - for a municipality, state, federal, or other public agency, by either a *"principal executive officer or ranking elected official."*

Each tenant representative identified in Section 5.1 is also required to certify this Plan, acknowledging they will maintain operational compliance with the requirements and procedures established in this Plan. Tenant certification of this Plan is included in Preface I. For a corporation, a responsible corporate officer means *"a president, secretary, treasurer, or vice-president of the corporation, or the manager of one of more manufacturing, production, or operating facilities, provided that the manager is authorized to make management decisions which govern the operation of the regulated facility,…… and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures."*

In the event of a revision or modification to this SWPPP, the certification must be re-certified by an Airport representative and tenant representatives. A record of changes is included as Appendix C.

3.0 STORMWATER POLLUTION PREVENTION TEAM

Airport personnel listed in Table 1, below, are the designated members of the Airport Stormwater Pollution Prevention Team (SWPPT). The SWPPT roster lists the names, titles, and contact telephone numbers for each member. The SWPPT is responsible for the implementation, maintenance, and revision of the Plan.

Table 1: Stormwater Pollution Prevention Team Roster

Team Member	Title	Phone Number
Katie Servis	Airport Manager	508-775-2020
Matthew Elia	Assistant Airport Manager	508-775-2020
Bob Holzman	Operations Supervisor	508-778-7770
Hildie Rios	Aviation Fuel Coordinator	508-778-7770
Brad Everson	Airport Rescue Coordinator	508-778-7770
James Barrie	Maintenance Supervisor	508-778-7772
Chris Daniels	Maintenance	508-778-7772

4.0 REVISIONS TO THE STORMWATER POLLUTION PREVENTION PLAN

Revision of the SWPPP is required if any of the following circumstances occur:

- A change in the site which alters the potential for pollutants to be present in stormwater discharges from the Airport;
- A release of a reportable quantity (as defined by CERCLA and Clean Water Act regulations) of oil or a hazardous substance;
- The SWPPP proves to be ineffective in achieving the goal of controlling pollutants in stormwater discharges; or
- Routine facility inspections identify potential pollutant sources which must be addressed.

Revisions to the SWPPP must be documented on the Stormwater Pollution Prevention Plan Revision Log included as Appendix C.

This revision of the SWPPP was completed to update the SWPPP according to site changes at the Airport including construction of a new fuel farm and added drainage facilities. The Site Plan (Figure 3) was updated to reflect current conditions at the Gate F Fuel Farm and new drainage structures.

5.0 GENERAL AIRPORT INFORMATION

The Airport provides commercial airline service and general aviation services to Boston, Cape Cod, and the Islands of Martha's Vineyard and Nantucket. The Airport began operations in 1928 and is the third largest and busiest airport in Massachusetts.

The Airport is located on approximately 645 acres, of which 631 acres lie within the Town of Barnstable, with the remaining 14 acres lying within the Town of Yarmouth. Of the 645 acres, approximately 142 are paved for use as taxiways, runways, and parking aprons, or are covered by buildings and structures. The Airport is bordered to the south by Barnstable Road (Route 132), to the west by Yarmouth Road, to the north by Massachusetts Fish & Wildlife designated conservation area and Route 6, and to the east by an industrial park (Independence Park), and is located at approximately 41.6666° North, 70.2859° West. A locus map and site map are included as Figures 1 and 2.

Structures on Airport property include the Main Terminal and air traffic control tower (ATCT), several service and storage hangars, tenant facilities, employee and passenger parking lots, and the Airport Operations building. Airport property and structures located along runways 6/24 and 15/33 are commonly referred to as the East and North

Ramps, respectively. Structural features of both Ramps are identified on the stormwater drainage plan included as Figure 3.

More than 40 tenant businesses operate on Airport property, providing industry-related services. Tenant operations include passenger airline services, general aviation services, maintenance and servicing of aircraft and associated aviation equipment, aviation fuel transfer, temporary aircraft parking and long term aircraft storage, light transportation warehousing, long and short term vehicle parking lots, overflow vehicle parking lots, rental car agencies, and general facility maintenance. Aircraft maintenance activities include engine maintenance, fluid and filter changes, electronics repair, hydraulic system repair, aircraft body repair, and wheel and tire maintenance and repair. Potential pollutants associated with tenant activities include virgin and waste aviation fuels, oils, antifreeze, deicing solutions, coatings, lubricants, solvents, sealants, and cleaning solutions. Tenants with operations requiring compliance with the provisions of this plan are identified in Section 5.1. Tenant responsibilities and compliance with the Airport's SWPPP are described in further detail in Sections 5.2 and 11.0. The location of potential pollutants is indicated on Figure 2.

Airport Rescue Fire Fighting and Airport Operations (ARFF/OPS) responsibilities include Jet A fuel transfer, supervision of Airport contractors inside the perimeter fence, fire and rescue response activities and emergency spill response. Airport Maintenance activities include building maintenance and grounds-keeping operations, equipment maintenance, maintenance of runways and paved areas, snow removal and deicing fluid recovery operations, emergency spill response, airfield mowing, and utility maintenance. Potential pollutants associated with ARFF/OPS and Maintenance activities include virgin and waste aviation fuels, oils, and antifreeze, deicing solutions, coatings, lubricants, solvents, sealants, and cleaning solutions.

5.1 Airport and Tenant Information

Current ARFF/OPS, Maintenance, and tenant contact information are presented below. Only Airport or tenant operations that are subject to NPDES regulatory requirements are included in Table 2 below.

Table 2: Airport and Tenant Contact Information

Katie Servis Airport Manager 480 Barnstable Road - 2nd Floor Hyannis, MA 02601	Helyne Medeiros Rectrix Aerodrome Center, Inc. Box 13 - 730 Barnstable Road Hyannis, MA 02601
Hildie Rios Aviation Fuel Coordinator 480 Barnstable Road Hyannis, MA 02601	Peter Farrell Cape Air / Nantucket Airlines 660 Barnstable Road Hyannis, MA 02601
Brad Everson Airport Rescue Fire Fighting Coordinator 480 Barnstable Road - 2nd Floor Hyannis, MA 02601	Robert Griffin Griffin Avionics 630 Barnstable Road Hyannis, MA 02601
James Barrie Airport Maintenance Supervisor 480 Barnstable Road Hyannis, MA 02601	John Cahill Hertz Car Rental 480 Barnstable Road Hyannis, MA 02601
Robert Holzman Airport Operations Supervisor 480 Barnstable Road - 2nd Floor Hyannis, MA 02601	Jody Lewis Allies Air 550 Barnstable Road Hyannis, MA 02601
AMA Nantucket Inc. Peter Greaves 130 Mary Dunn Way Hyannis, MA 02601	Cape Flight Instruction Edmund Cottle 150 Mary Dunn Way Hyannis, MA 02601

5.2 Tenant Operations Under the SWPPP

This SWPPP is to be implemented by the Airport and all tenants identified in Section 5.1. Tenant responsibilities under the SWPPP include operational compliance with the practices and control measures described in Section 11, the Airport Deicing Program, and the Airport Spill Prevention Control and Countermeasures Plan (SPCCP). As described in Section 11.6, tenants responsible for deicing aircraft are required to record the volume of deicing fluid used daily and report the cumulative volume of deicing fluid used during each calendar month to the Airport Manager's office. As described in

Section 13.0, the Airport will continue to conduct all facility inspections, stormwater visual assessments, and reporting required under the 2021 MSGP.

6.0 STORMWATER DRAINAGE PLAN

The Stormwater Drainage Plan (Figure 3) identifies stormwater drainage utilities and major facilities at the Airport, and includes the following elements:

- Airport facilities, including a footprint of all buildings, structures, roads, aprons, taxiway and runways, other paved areas, and parking lots;
- Schematic layout of the stormwater drainage system, including ditches, pipes, swales, and an indication of flow direction, to the best of the Airport's knowledge and belief*;
- Drainage areas associated with each stormwater outfall;
- Drainage areas associated with Class V injection wells;
- Areas of pervious surfaces, where stormwater infiltrates directly, including areas receiving sheet flow runoff from impervious surfaces not discharging to a stormwater outfall or Class V injection well;
- Location of potential pollutant sources (Table 3 and Figure 2), as defined in 2021 MSGP, Part 6.2.3.2;
- Location of significant spills or leaks that have occurred in the past three years, as defined in 2021 MSGP, Part 6.2.3.3 (Figure 2);
- Location of all unauthorized, non-stormwater discharges, as defined in 2021 MSGP, Part 6.23.4;
- Fuel storage and transfer areas;
- Vehicle equipment maintenance and/or cleaning areas;
- Liquid storage tanks;
- Transfer areas for bulk substances;
- Machinery; and
- Locations and sources of off-site pollutants that could potentially impact Airport property (Figure 2).

* This SWPPP provides information on the stormwater drainage system based on information provided by the Airport and observed during field reconnaissance.

7.0 DRAINAGE AREAS AND POTENTIAL POLLUTANT SOURCES

The majority of stormwater collected on impervious surfaces at the Airport is managed through a network of catch basins discharging to surface water outfalls, infiltration basins, vegetated swales, and Class V injections wells (more commonly known as leaching catch basins). This SWPPP designates drainage areas discharging to surface waters and infiltration basins as Drainage Areas A, B, C, D, E, F, H, I, J, K, L, M, and N. The SWPPP also identifies areas where stormwater is discharged to Class V injection wells infiltrating directly into the subsurface, designated as Drainage Areas F, G, I, L, and M (Figure 3).

A portion of stormwater in each drainage area is also infiltrated at the edge of impervious surfaces in the form of sheet-flow runoff. The boundaries of these areas are controlled primarily by the topography of the land, and in some cases, the surrounding roads, taxiways, and runways. The majority of Airport property is pervious vegetated airfield surfaces in areas characterized by little to no potential for potential pollutants to be exposed to stormwater.

The Airport conducts regular inspections of facilities on Airport property to ensure compliance with the requirements established in this SWPPP and the Airport's SPCCP. Inventories of potential pollutants stored and used by the Airport and Airport tenants have been completed and updated regularly in support of the SPCCP and SWPPP. For the purposes of this SWPPP, products have been placed into several representative groups, including aviation fuels, antifreezes, sealants, coatings, lubricants, solvents, deicing fluids, and waste products derived from the use of any of these products (Figure 2).

For each drainage area identified in the Stormwater Drainage Plan (Figure 3), potential pollutants and their storage location (Figure 2) are identified and described in further detail below. Locations of buildings and airfield features are referenced to Figure 3. Potential pollutants at the Airport are stored within Airport or tenant buildings or within sealed containment structures (i.e., fuel storage tanks) and are not exposed to stormwater. This SWPPP identifies these as potential pollutants due to the potential for spills or minor releases during delivery, transfer, or disposal procedures, or the potential for exposure following application (i.e., deicing fluid).

Table 3: Drainage Areas and Potential Pollutants

Drainage Area	Size (acres)	Uses	Operator(s)	Existing BMPs	Potential Pollutants
A	25.9	Runway 15/33 and Taxiway A	Airport	Catch basins with sediment traps and a Vortechs water quality unit	Aviation fuel
B	14.9	Main Terminal apron, the South Ramp, and Taxiway A	Airport and tenant mobile refuelers	Catch basins with sediment traps, an oil/water separator and a Vortechs water quality unit	Deicing fluids, fuels, oils, antifreezes, hydraulic fluids, solvents, lubricants, sealants, and cleaning compounds
C	31.1	Runway 15/33, Taxiways A and D, the North Ramp, and the Gate F Fuel Farm	Airport/Cape Air	Catch basins with sediment traps, two Oil/Water Separators, Stormtech system, and Vortechs water quality units	Aviation fuel, unleaded gasoline, diesel fuel, oils, antifreezes, hydraulic fluids, solvents, lubricants, sealants, and cleaning compounds
D	130.2	Runway 6/24, the Runway 33 approach of Runway 15/33, Taxiway C, and Taxiways B and D	Airport/Cape Air	Catch basins with sediment traps and a Vortechs water quality unit	Aviation fuel and residual deicing fluid
E	7.7	Rectrix Aerodrome Center, Inc. and its associated paved apron, the access road from Barnstable Road to the hangar, and several paved parking lots	Rectrix Aerodrome Center, Inc. and Barnstable Municipal Airport	bioretention basin and catch basins with sediment traps	Aviation fuel and residual deicing fluid
F	14.5	Airport access road connecting Attucks Lane to Barnstable Road, Barnstable Road, tenant parking lots, overflow parking lots, the Griffin Avionics apron area, and the Cape Town Shopping Center parking lot	Airport, Rectrix, Cape Air, Griffin Avionics, and Specialized Automotive	Catch basins, O/WS, Stormtech underground recharge structures, and an infiltration basin	Aviation fuel, oils, gasoline, antifreezes, hydraulic fluids, solvents, lubricants, sealants, and cleaning compounds
G	10.7	North Ramp, Taxiway D, and paved apron areas adjacent to tenant hangars	Airport, Rectrix, Cape Air, and Griffin Avionics	Catch basins with sediment sumps and oil/water separator	Aviation fuel, antifreeze, oil, solvents, lubricants, sealants, coatings, and adhesives
H	8.9	Taxiway B, Perimeter road, transient area for	Airport	Catch basins with sediment sumps	Aviation fuel and residual deicing fluid

Drainage Area	Size (acres)	Uses	Operator(s)	Existing BMPs	Potential Pollutants
		aircraft, aircraft support vehicles, and ARFF/OPS and Maintenance vehicles			
I	5.2	Hexagon hangar and Kingsbury Aviation hangars	Tenants and Kingsbury Aviation	Catch basins with sediment sumps	None
J	10.0	East Ramp apron, Taxiway B, and tenant hangars	Airport, Cape Flight Instruction, and Hyannis Hangar LLC	Catch basins with sediment sumps and vegetated swale	Avgas and aviation fuels
K	7.3	East Ramp apron, Taxiway B, Gate P Fuel Farm, and tenant hangars	Airport, Rectrix / Air Cape Cod, and AMA Nantucket Inc.	Catch basins, vegetated swale and Vortechs water quality unit	Aviation fuels, oils, antifreezes, hydraulic fluids, solvents, lubricants, sealants, cleaning compounds, wood and timber products, and deicing fluids
L	10.3	Steamship Authority parking lot	Steamship Authority	None, stormwater infiltrates directly into the ground surface.	automotive fluids including diesel and gasoline fuels, hydraulic fluids, and antifreeze
M	38.5	Taxiway B, ARFF building, East Ramp apron area, the Rectrix / Air Cape Cod hangar, the Airport perimeter road, Mary Dunn Road, and the unpaved runway safety areas of the airfield at the southern ends of Runways 6/24 and 15/33	Barnstable Municipal Airport and Rectrix / Air Cape Cod	None, stormwater infiltrates directly into the ground surface.	Aviation and automotive fuels, oils, and antifreezes, sealants, adhesives, coatings, solvents, and cleaning products
N	13.5	Parking areas and access roads	Barnstable Municipal Airport	Catch basins with sediment sumps and bioretention areas	Fuels, antifreeze, and salt (calcium chloride)
O	1.2	Car service and rental facilities	Avis Rent-A-Car, Hertz Car Rental, and Budget Truck Rental	Catch basins with sediment sumps	gasoline, oil, antifreeze, detergents, surface cleaning products, and automotive interior detailing products

7.1 Drainage Area A

Drainage Area A encompasses the northwest end of Runway 15/33 on the north side of the Airport airfield, impervious surfaces in this area include a portion of Runway 15/33 and Taxiway A. Stormwater from these impervious surfaces is collected through a network of catch basins discharging to Outfall A, located on Upper Gate Pond (Figure 3). Prior to discharge, stormwater is treated by a Vortechs® hydrodynamic separator. Calculated total suspended solid (TSS) removal rates for these water quality units range from 81% to 87% with total petroleum hydrocarbon (TPH) removal at 67%. Since the installation of the Vortechs® units in 2011, 100% of stormwater discharged to the ponds receives pretreatment. Potential stormwater pollutants in Drainage Area A include de minimis amounts of aviation fuel released due to aircraft tank expansion venting.

7.2 Drainage Area B

Drainage Area B encompasses the Main Terminal apron area, the South Ramp, and portions of Taxiways A, B, and C. ARFF/OPS and tenant activities within Drainage Area B include aircraft refueling, deicing, maintenance, parking, passenger loading and unloading, and general aviation support services. Potential pollutants associated with activities within Drainage Area B include deicing fluids, fuels, oils, antifreezes, hydraulic fluids, solvents, lubricants, sealants, and cleaning compounds, and are described in further detail below.

7.2.1 Main Terminal Apron Area

The Main Terminal apron area is utilized as a staging and parking area for aircraft, unloading and loading area for passengers and baggage, and refueling of aircraft with Jet A and/or 100 Low Lead aviation gas (Avgas) from tenant operated mobile refuelers. Stormwater from the Main Terminal Apron Area impervious surfaces is collected by a network of three catch basins discharging via a 30-inch diameter pipe to Outfall B. Prior to discharge, stormwater is treated by a Vortechs® hydrodynamic separator. Calculated TSS removal rates for these water quality units range from 81% to 87% with TPH removal at 67%. Passenger and baggage loading and unloading operations in the Main Terminal apron area are not expected to result in the exposure of potential pollutants to stormwater.

ARFF/OPS, Cape Air, Griffin Avionics, and Rectrix / Air Cape Cod operate mobile refuelers in the Main Terminal Apron Area. During the winter, Cape Air mobile refuelers are typically staged and parked overnight at the western end of the Main Terminal apron area, (Building 10). Rectrix / Air Cape Cod typically stages their mobile refueler at the East Ramp Gate P Fuel Farm (Area 16), and Griffin Avionics mobile refuelers are typically staged and parked overnight at the Griffin Avionics fuel transfer station

(Building 3). Rectrix / Air Cape Cod typically stages their Jet A mobile refueler near the Rectrix Hangar (Building 1) during the winter, but the Jet A mobile refueler is staged at the designated parking area for mobile refuelers near the Gate F Fuel Farm (Area 7).

7.2.2 South Ramp

The South Ramp is designated as the southern portion of the Main Terminal apron area and is utilized as the central deicing pad and washing pad for aircraft (Area 13, Figure 3). Pavement in the South Ramp slopes in a northerly direction, concentrating all runoff toward catch basin TR-9. Catch basin TR-9 is outfitted with a series of manually operated gate valves that control discharge from the South Ramp. During deicing or aircraft washing operations, the valves are closed and discharge residual deicing fluid or wash water to the Barnstable Water Pollution Control Facility (WPCF). When aircraft deicing or washing is not taking place, the valves are opened, and stormwater is discharged to Upper Gate Pond. Prior to discharge, stormwater is treated by an O/WS and a Vortechs® hydrodynamic separator. Calculated TSS removal rates for these water quality units range from 81% to 87% with TPH removal at 67%. Since the installation of the Vortechs® units in 2011, 100% of stormwater discharged to the ponds receives pretreatment. Deicing operations and deicing fluid recovery are discussed in greater detail in Section 12.5. When not in use as a deicing pad, the South Ramp is utilized as a transient area for aircraft and ground support vehicles and is characterized similar to other paved apron and taxiway areas in regard to potential pollutants.

7.2.3 Taxiways A, B, and C

A portion of Taxiway A contained in Drainage Area B, are collectively utilized as a transient area for aircraft, aircraft support vehicles, and Airport vehicles. Potential pollutants include aviation fuel released during refueling and aircraft tank expansion venting, and residual deicing fluid runoff from aircraft surfaces following application. Stormwater from these impervious surfaces is collected through a network of catch basins discharging via a 30-inch diameter pipe to Outfall B, located on Upper Gate Pond. Prior to discharge, stormwater is treated by a Vortechs® hydrodynamic separator. Calculated TSS removal rates for these water quality units range from 81% to 87% with TPH removal at 67%. Since the installation of the Vortechs® units in 2011, 100% of stormwater discharged to the ponds receives pretreatment.

7.3 Drainage Area C

Drainage Area C encompasses the portion of Runway 15/33 running from the eastern edge of Drainage Area A to the intersection with Taxiway C, portions of Taxiways A, and D, and a portion of the North Ramp including the Gate F Fuel Farm. Potential pollutants in Drainage Area C are associated with aircraft maintenance, fuel transfer and bulk fuel

storage of Jet A aviation fuel, unleaded gasoline, and diesel fuel. Tenant operations within Drainage Area C could potentially introduce pollutants including virgin and waste aviation fuels, oils, antifreezes, and hydraulic fluids, solvents, lubricants, sealants, and cleaning compounds. Stormwater from Drainage Area C is collected through a network of catch basins discharging to Outfalls B and C, located on Upper Gate Pond. Prior to discharge at either location, stormwater is treated by Vortechs® hydrodynamic separators. Calculated TSS removal rates for these water quality units range from 81% to 87% with TPH removal at 67%. Since the installation of the Vortechs® units in 2011, 100% of stormwater discharged to the ponds receives pretreatment. Two O/WS are located within the Gate F Fuel Farm to intercept petroleum prior to entering the stormwater system in the event of a release.

7.3.1 Runway 15/33 and Taxiways A and D

Runway 15/33 and the taxiway areas are utilized as transient areas for aircraft, aircraft support vehicles, and ARFF/OPS and Maintenance vehicles. Potential pollutants are limited to de minimis amounts of aviation fuel released due to aircraft tank expansion venting and residual deicing fluid runoff from aircraft surfaces following application on the South Ramp deicing pad. Refueling of aircraft does not occur on the Runway or Taxiways within Drainage Area C.

7.3.2 Gate F Fuel Farm

The Gate F Fuel Farm was improved in 2016 by removal of the underground storage tanks and installation of three new 20,000-gallon aboveground storage tanks (AST) containing Jet A aviation fuel. There are also a 4,000-gallon diesel and a 4,000-gallon unleaded gasoline AST.

The new fuel farm features secondary containment, leak detection monitoring, as well as an emergency shut off valve, and two O/WS that connect to the existing storm drain system. The fuel transfer area, where fuel delivery trucks and mobile refuelers are parked during transfers, drains into a concrete secondary containment pad. Stormwater collected within the containment pad is inspected for signs of pollutants by Airport personnel prior to being discharged to an O/WS and the Airport stormwater system. The SWPPP drainage map has been revised following construction to reflect changes to the drainage system and structural controls to prevent or mitigate a release of pollutants.

ARFF/OPS personnel conduct FAA required testing of the fuel from the Gate F Jet A ASTs and the Airport's mobile refuelers daily, generating approximately five gallons of sample fuel per day. Sample fuel is returned to the tank via a recycling system located within the fuel farm.

7.3.3 Griffin Avionics Fuel Transfer Station

Griffin Avionics operates a fuel transfer station located adjacent to the northeast corner of the Griffin Avionics hangar (Building 4, Figure 3) containing two underground 10,000-gallon Avgas USTs. Griffin Avionics and Cape Air refuel mobile refuelers at the Griffin Avionics fuel transfer station. Avgas is transferred into mobile refuelers on the paved apron area adjacent to the fuel pump island, stormwater from impervious surfaces adjacent to the fuel pump island is discharged to two adjacent catch basins located near the fence. These catch basins are connected to the water quality isolator row of the Stormtech subsurface underground recharge chambers.

7.3.4 Building 6 – Hangar 2

Hangar 2, located on the North Ramp of the Airport, is currently occupied by Cape Air. Airport Maintenance also utilizes a portion of the interior hangar space and exterior paved apron for storage of Airport snow removal vehicles. A portion of the stormwater from impervious surfaces surrounding Hangar 2 is infiltrated into the subsurface by a network of Class V injection wells, and is primarily located within Drainage Area G. However, a trench drain with a surface grate was installed in 2016 along the north side of Hangar 2. The drain connects to the new fuel farm and drains to NR-12 then subsequently discharges to Outfalls B and C. Prior to discharge to the Outfalls, stormwater is treated by a Vortechs® hydrodynamic separators. Calculated TSS removal rates for these water quality units range from 81% to 87% with TPH removal at 67%. Since the installation of the Vortechs® units in 2011, 100% of stormwater discharged to the ponds receives pretreatment.

Vehicle and product storage in this area occurs primarily inside of Hangar 2 and is not expected to result in an exposure to stormwater. Snow removal equipment is stored on the paved apron area located to the east of the Hangar. Potential pollutants are limited to de minimis amounts of hydraulic fluids, oils, and fuels released during equipment operation or storage.

7.4 Drainage Area D

Drainage Area D is the largest drainage area at the Airport, and encompasses all of Runway 6/24, the Runway 33 approach of Runway 15/33, Taxiway C, and portions of Taxiways B and D. Stormwater from these impervious surfaces is collected through a network of catch basins discharging to Outfall D, located on Lewis Pond, and Class V injection wells discharging directly to the subsurface. Prior to discharge from Outfall D, stormwater is treated by a Vortechs® hydrodynamic separator (Figure 3). Calculated TSS removal rates for these water quality units range from 81% to 87% with TPH removal at 67%. Since the installation of the Vortechs® units in 2011, 100% of

stormwater discharged to the ponds receives pretreatment. Potential stormwater pollutants in Drainage Area D include de minimis aviation fuel released during aircraft tank expansion venting and residual deicing fluid runoff from aircraft surfaces following application.

7.5 Drainage Area E

Drainage Area E encompasses a portion of the North Ramp currently occupied by Rectrix Aerodrome Center, Inc. (Rectrix) and its associated paved apron, the access road from Barnstable Road to the hangar, and several paved parking lots. Stormwater from these impervious surfaces is discharged to a system of two bioretention basins that subsequently discharge into a common infiltration basin (Figure 3). A manually operated shut-off valve located between catch basin RTX-1CB and the landscaped stormwater basin can be shut off in the event of a release to contain spilled material and minimize associated impacts.

Rectrix does not conduct maintenance of aircraft currently; hangar space is used primarily for the storage of aircraft and client vehicles. Rectrix regularly conducts refueling of aircraft on the paved apron area adjacent to the Rectrix hangar. Rectrix has ceased aircraft deicing operations effective December 2016. Any deicing of aircraft that is needed is conducted on the South Ramp deicing pad. Potential stormwater pollutants in Drainage Area E could include small amounts of aviation fuel released during refueling operations and aircraft tank expansion venting, and residual deicing fluid from deicing activities in the event that Rectrix resumes deicing operations. Deicing operations are discussed in greater detail in Section 12.5.

7.6 Drainage Area F

Drainage Area F is comprised of the Airport access road connecting Attucks Lane to Barnstable Road, a portion of Barnstable Road, tenant parking lots, overflow parking lots, a portion of the Griffin Avionics apron area, and a small portion of the Cape Town Shopping Center parking lot. Stormwater from the Airport access road adjacent to the Cape Air hangar (Building 2) is collected through two catch basins and is discharged to Outfall F, located on a retention pond located north of the Shopping Center. Stormwater from the northernmost portion of the access road is collected through a network of catch basins discharging to a system of two landscaped stormwater basins that subsequently discharge into a common infiltration basin. Stormwater from an unpaved parking area located north of the Cape Air hangar is managed by a similar system. The remaining areas of the drainage area include Barnstable Road between the Griffin Avionics and buildings 8 and 9, and a portion of the Griffin Avionics apron area. Stormwater from these areas is collected by a network of catch basins discharging to Stormtech subsurface infiltration structures located in the Griffin parking lot. Potential

pollutants associated with activities within Drainage Area F include aviation fuels, oils, gasoline, antifreezes, hydraulic fluids, solvents, lubricants, sealants, and cleaning compounds.

7.7 Drainage Area G

Drainage Area G encompasses the North Ramp of the Airport, including the western portion of Taxiway D and paved apron areas adjacent to tenant hangars. Stormwater from impervious surfaces in Drainage Area G is infiltrated directly into the subsurface through a network of catch basins and Class V injection wells. ARFF/OPS and tenant activities within Drainage Area G include aircraft refueling, maintenance, and storage, and are described in greater detail below. Hangar 2, previously discussed in Section 7.3.4, is also located within Drainage Area G.

7.7.1 Taxiway D

Taxiway D is utilized in a transient nature by aircraft and tenant, ARFF/OPS, and Maintenance vehicles. Potential stormwater pollutants associated with Taxiway D include aviation fuel released during refueling or due to aircraft tank expansion venting. Stormwater collected from Taxiway D is discharged to catch basins and Class V injection wells located along the edge of the taxiway infiltrating stormwater directly into the subsurface.

7.7.2 Building 3 – Griffin Avionics

Griffin Avionics conducts aircraft maintenance and storage and provides general aviation services. Potential pollutants associated with Griffin Avionics activities include virgin and waste aviation fuel, antifreeze, oil, solvents, lubricants, sealants, coatings, and adhesives. Storage and use of all potential pollutants, with the exception of Avgas, occurs inside of the Griffin hangar and is not expected to result in an exposure to stormwater. Waste fuel, oil, antifreeze, and solvent storage areas are located in the northwest and southeast corners of the hangar.

Aircraft undergoing maintenance are typically stored inside the hangar. Occasionally, aircraft undergoing extensive repairs will be weatherproofed and parked on the paved apron area while components are serviced inside the hangar (i.e., during a complete engine rebuild, the fuselage of the aircraft is weatherproofed and stored outside while the engine is rebuilt inside the hangar). The Griffin hangar features a floor drain system discharging to an O/WS and subsequently to municipal sewer through a permitted connection. Griffin staff are responsible for the maintenance of the O/WS.

Stormwater from the impervious surfaces located to the north of the Griffin Avionics hangar is collected in non-leaching catch basins NR-1 and NR-2, which subsequently discharge to NR-23, a Class V injection well infiltrating directly into the subsurface. The impervious surfaces located to the east and south of the hangar building discharge to the Access road stormwater system, described in Section 7.6.

7.7.3 Building 2 – Cape Air

Cape Air conducts aircraft maintenance and storage associated with passenger airline services. Potential pollutants at Cape Air include virgin and waste aviation fuel, antifreeze, oil, and solvents, and lubricants, sealants, deicing fluids, coatings, and adhesives. Storage and use of all potential pollutants, with the exception of Avgas, occurs inside of the Cape Air hangar and is not expected to result in an exposure to stormwater. Cape Air currently stores waste oil, waste antifreeze, and hydraulic oil in a separate storage room located at the southeastern corner of the hangar. Stormwater from the impervious surfaces surrounding the Cape Air hangar is discharged to Class V injection wells NR-24, NR-22, D-1, and D-25, infiltrating directly into the subsurface.

The northern bay of the Cape Air maintenance hangar features a floor drain and O/WS with a direct connection to municipal sewer, to allow for collection and discharge of aircraft washwater. The connection is permitted through the Town of Barnstable. Cape Air staff are responsible for the maintenance of the O/WS.

7.8 Drainage Area H

Drainage Area H is located to the east of Runway 6/24, encompasses the northeast portion of Taxiway B, and is utilized as a transient area for aircraft, aircraft support vehicles, and ARFF/OPS and Maintenance vehicles. Stormwater from Drainage Area H is collected through a network of five catch basins discharging to an infiltration basin. Potential stormwater pollutants in Drainage Area H include small amounts of aviation fuel released due to aircraft tank expansion venting, and residual deicing fluid.

7.9 Drainage Area I

Drainage Area I contains the Hexagon hangar and Kingsbury Aviation hangars, which are utilized for the indoor storage of privately owned aircraft. Aircraft maintenance and aircraft refueling are not permitted in the hangars or in Drainage Area I. There are no potential pollutants associated with current activities in Drainage Area I. Stormwater collected from impervious areas adjacent to these hangars is infiltrated directly into the subsurface through a network of nine Class V injection wells.

7.10 Drainage Area J

Drainage Area J encompasses the northeast portion of the paved East Ramp apron area and a portion of Taxiway B. Activities in this portion of the apron area include temporary and long-term aircraft parking and indoor storage of privately owned aircraft. Paved areas adjacent to the AMA Nantucket Inc. hangar contribute stormwater to both Drainage Areas J and K. AMA Nantucket Inc. activities are described in Section 7.11.3.

7.10.1 East Ramp Apron Area

A portion of the paved East Ramp apron area is located within Drainage Area J and is primarily utilized for the parking of privately owned aircraft. Refueling of aircraft occurs within this drainage area primarily during peak travel periods in the summer months. Stormwater collected from impervious areas primarily discharges to several pervious airfield surfaces located between Taxiway B and Runway 6/24. A portion of stormwater collected on the paved apron area discharges to catch basin ER-13, subsequently discharging to a vegetated swale via Outfall J. Potential pollutants associated with this portion of the East Ramp Apron area include Avgas and Jet A aviation fuels.

Refueling of aircraft fueled by Avgas is completed by Griffin and Rectrix / Air Cape Cod and occurs throughout the East Ramp apron area. Refueling of aircraft fueled by Jet A is conducted by ARFF/OPS and Rectrix /Air Cape Cod and occurs throughout the East Ramp apron area.

7.10.2 Building 21 - Hyannis Hangar LLC

Hyannis Hangar LLC operations in Drainage Area J are limited to the indoor storage of privately owned aircraft. Maintenance activities and aircraft refueling are not permitted in the hangar. Stormwater collected from impervious areas adjacent to the hangar is primarily infiltrated directly into the subsurface at the edge of paved surfaces.

7.10.3 Building 20 – Cape Flight Instruction

Cape Flight Instruction activities include aircraft storage. Stormwater from impervious surfaces located between Buildings 19 and 20 is collected by catch basin ER-29 and discharges to Outfall J-A, discharging to a vegetated swale also associated with Outfall J.

Storage and use of all potential pollutants occur inside of Cape Flight's hangar, and is not expected to result in an exposure of stormwater to potential pollutants.

7.11 Drainage Area K

Drainage Area K encompasses the southern portion of the East Ramp and Taxiway B. Stormwater collected from impervious surfaces in Drainage Area K is collected through a network of catch basins discharging to Outfall D. Prior to discharge from Outfall D, stormwater is treated by a Vortechs® hydrodynamic separator (Figure 3). Calculated TSS removal rates for these water quality units range from 81% to 87% with TPH removal at 67%. Paved areas adjacent to the AMA Nantucket Inc. hangar also contribute stormwater to Drainage Area J, previously discussed in Section 7.10.3.

The emergency generator for runway lighting formerly located in the southern portion of Drainage Area K has been converted to natural gas.

Tenant activities within Drainage Area K also introduce potential pollutants including both virgin and waste aviation fuels, oils, antifreezes, hydraulic fluids, solvents, lubricants, sealants, cleaning compounds, wood and timber products, and deicing fluids, and are described in further detail below.

7.11.1 East Ramp Apron Area

The East Ramp apron area is primarily utilized for the parking of privately owned aircraft and is most heavily utilized during the summer months. Stormwater collected from impervious areas primarily discharges to several pervious airfield surfaces located between Taxiway B and Runway 6/24. Stormwater collected from impervious surfaces adjacent to Buildings 18 and 19 discharges to Outfall D. Prior to discharge from Outfall D, stormwater is treated by a Vortechs® hydrodynamic separator (Figure 3). Calculated TSS removal rates for these water quality units range from 81% to 87% with TPH removal at 67%. Potential pollutants associated with this portion of the East Ramp Apron include de minimis amounts of aviation fuel released during aircraft refueling or as a result of aircraft tank expansion venting.

7.11.2 Area 16 – Rectrix / Air Cape Cod East Ramp Gate P Fuel Farm

Air Cape Cod is located on the East Ramp at the Airport and is managed by Rectrix (Figure 3). Rectrix / Air Cape Cod currently operates a 10,000-gallon Avgas AST and a 10,000-gallon Jet-A AST at this location. Rectrix conducts refueling of aircraft on the East Ramp and at the North Ramp hangar facility. Stormwater from areas adjacent to the Rectrix/Air Cape Cod Fuel Farm is discharged to catch basin ER-7 and subsequently Outfall D. Prior to discharge from Outfall D, stormwater is treated by a Vortechs® hydrodynamic separator (Figure 3). Calculated TSS removal rates for these water quality units range from 81% to 87% with TPH removal at 67%.

7.11.3 Building 19 – AMA Nantucket Inc.

Building 19, operated by AMA Nantucket Inc., functions as an aircraft maintenance facility and building construction materials shipping facility. Stormwater collected from impervious surfaces on the southwestern side of Building 19 is discharged to catch basin ER-28 and ultimately to Outfall D. Prior to discharge from Outfall D, stormwater is treated by a Vortechs® hydrodynamic separator (Figure 3). Calculated TSS removal rates for these water quality units range from 81% to 87% with TPH removal at 67%. Stormwater from the parking lot behind the building discharges to a grassy area with a gravel swale, which leads to a pipe that drains into the same infiltration basin as Outfall J-A. Materials associated with aircraft maintenance include virgin and waste aviation fuel, antifreeze, oil, solvents, lubricants, sealants, deicing fluids, coatings, and adhesives. Exposure of potential pollutants to stormwater is unlikely, as all maintenance activities occur within the hangar, virgin and waste materials are stored within the hangar, and waste material storage locations feature secondary containment structures.

AMA Nantucket Inc. also functions as a building construction material shipping facility, supplying local hardware stores, businesses, and contractors on the island of Nantucket. Materials exposed to stormwater include raw lumber and prepackaged building materials. Stormwater collected in the building materials portion of the yard, located on the eastern side of Building 19, is discharged to catch basin ER-29 and subsequently discharges to a vegetated swale via Outfall J-A.

7.12 Drainage Area L – Steamship Authority Parking Lot

Drainage Area L is located in the southeast corner of the Airport's property, along Mary Dunn Road, and is currently leased to the Woods Hole, Martha's Vineyard, and Nantucket Steamship Authority (Steamship Authority). Drainage Area L is currently utilized by the Steamship Authority as an overflow parking lot and freight staging area in support of their Hyannis ferry terminal. Stormwater in this are infiltrates directly into the ground surface. The overflow passenger vehicle portion of the lot is accessed through an entrance located on Brooks Road and is typically in operation between May and August. The freight portion of the lot is accessed through an entrance located on Mary Dunn Road, and is used throughout the year as necessary to prevent traffic congestion at the Hyannis ferry terminal. Potential pollutants associated with the operation of the Steamship Authority parking lots include automotive fluids including diesel and gasoline fuels, hydraulic fluids, and antifreeze. Vehicles transporting hazardous materials are prohibited from parking in either parking lot. Drainage in this area occurs through infiltration in unpaved surfaces.

7.13 Drainage Area M

Drainage Area M contains a portion of Taxiway B, paved surfaces surrounding the ARFF building, a portion of the East Ramp apron area adjacent to the Rectrix / Air Cape Cod hangar, a portion of the Airport perimeter road and Mary Dunn Road, and the unpaved runway safety areas of the airfield at the southern ends of Runways 6/24 and 15/33. Stormwater collected from impervious surfaces in the drainage area are infiltrated directly into the subsurface through Class V Injection wells or through direct infiltration at the edge of pavement. Potential pollutants associated with activities in these areas are described in further detail, below.

7.13.1 Building 14 – Airport Rescue Fire Fighting and Snow Removal Equipment Facility

Drainage Area M includes the Airport Rescues and Fire Fighting (ARFF)/ Snow Removal Equipment (SRE) facility (Building 14). The Airport Operations facility occupies the offices and garage bays in the northwest portion of the building, while Maintenance occupies the remaining garage bays and office space in the southeast portion of the building. Stormwater from the paved surface along the northeast side of Building 14 and all runoff from the building roof is collected by catch basins ER-1 and ER-3 and are directed to a subsurface infiltration system located near Gate B. Stormwater from the employee parking area adjacent to Building 14 either infiltrates at the edge of pavement in pervious airfield surfaces or is discharged to catch basin RW1533-26 and infiltrated directly into the subsurface. Potential pollutants associated with ARFF/OPS and maintenance activities include virgin and waste aviation and automotive fuels, oils, and antifreezes, sealants, adhesives, coatings, solvents, and cleaning products.

General maintenance for the Airport's fleet of vehicles, SRE, and grounds-keeping equipment occurs within Building 14. The ARFF/SRE garage bays are used primarily for the storage of vehicles, and feature a floor drain discharging to an O/WS for pretreatment prior to discharge to municipal sewer under a permitted connection. ARFF/OPS also operate two 5,000-gallon and a 3,000-gallon Jet A mobile refuelers. The mobile refuelers are parked on the paved area adjacent to the northeast side of Building 14 when not in use.

Several areas within the interior of Building 14 are utilized for the storage of oil, hydraulic oil, cleaning solvents, greases, transmission fluids, antifreezes, waste oil filters, and waste absorbent materials. These potential pollutants are unlikely to be exposed to stormwater as they are stored, transferred, and applied within the building. Airport Maintenance utilizes a 350-gallon split tank double walled AST, located outside at the southeast corner of Building 14, for the storage of waste oil and antifreeze. The potential for these pollutants to be exposed to stormwater during the transfer of products in and out of the AST is minimal.

7.13.2 Runway Safety Areas

Drainage Area M includes unpaved runway safety areas extending from the ends of Runways 6/24 and 15/33. Stormwater in these areas is managed through a network of Class V injection wells located in low lying areas throughout the grassed airfield. These areas also receive sheet-flow stormwater run-off from portions of both runways that are not connected to the Airport's drainage system. Stormwater from the Airport perimeter road is primarily discharged at the edge of pavement, and through several Class V injection wells. Activities in the grassed airfield include turf maintenance and maintenance of Airport lighting and instrumentation. Potential pollutants in these areas are limited to releases resulting from aircraft accidents and maintenance vehicles.

7.13.3 Building 15 – Rectrix / Air Cape Cod

Rectrix conducts minor aircraft maintenance and general aviation support out of Air Cape Cod, an East Ramp hangar facility (Building 15). Stormwater collected from impervious surfaces adjacent to the hangar is discharged to Class V injection wells infiltrating directly into the subsurface. Materials associated with aircraft maintenance activities include virgin and waste aviation fuel, antifreeze, hydraulic oil, oil, and solvents, lubricants, sealants, coatings, and adhesives. Exposure of potential pollutants to stormwater is unlikely, as all maintenance activities occur within the hangar, virgin and waste materials are stored within the hangar, and waste material storage areas feature secondary containment structures.

7.14 Drainage Area N

Drainage Area N encompasses short term and long-term parking areas and access roads utilized by Airport employees, passengers, rental car agencies, and patrons of Airport businesses. Short and long-term parking areas consist of paved surfaces located to the east, west and south of the Main Terminal building (Building 10). The majority of stormwater from these surfaces is discharged to a network of surface bioretention and infiltration structures. Potential pollutants associated with the utilization of these parking areas include fuels and antifreeze from vehicles, and limited application of salt (calcium chloride) when necessary for safe pedestrian travel.

Two natural gas fueled emergency generators for the Main Terminal are located near the southeast corner of Building 10. No pollutants are expected to be release from these units.

7.15 Drainage Area O - Car Rental Service Facilities

Avis Rent-A-Car, Hertz Car Rental, and Budget Truck Rental maintain car service facilities on Airport property south of Barnstable Road. Activities associated with the car service facilities include vehicle refueling, topping off of vehicle fluids, vehicle washing, and detailing of vehicle interiors. Potential pollutants associated with these activities include gasoline, oil, antifreeze, detergents, surface cleaning products, and automotive interior detailing products. Stormwater from this area discharges to catch basins with sediment sumps.

Exposure of potential pollutants to stormwater associated with rental car servicing includes potential releases of automotive fluids, including unleaded gasoline, oil, and antifreeze, and minor releases of residual detergents following vehicle washing. Minor releases of residual detergents likely occur as vehicles leave the garage service bays. The most likely exposure of potential pollutants occurs during vehicle servicing or storage in the facility parking lots, when fluids may be released to the pavement following topping off or as a result of engine malfunction. Rental car vehicles are also staged for customer pickup in the northwest portion of the Main Terminal parking lot, previously described in Section 7.14.

7.15.1 Building 27 – Hertz Car Rental

Hertz Car Rental service activities include vehicle refueling, topping off of vehicle fluids, vehicle washing and detailing, and vehicle storage. Vehicle washing and topping off of fluids occurs within a drive-through, single-bay garage structure. Vehicle wash-water is discharged to a garage floor drain discharging to an O/WS and subsequently to municipal sewer, a similar floor drain is located at the exit of the garage bay to capture residual wash water from exiting vehicles. With the exception of unleaded gasoline, all automotive fluids are stored and transferred within the garage-bay. Vacuuming and surface detailing of vehicles occurs within the garage bay and on the paved surfaces of the parking lot. Hertz currently operates a single-pump unleaded gasoline fuel station supplied by a 10,000-gallon UST, located in the facility parking lot.

7.15.2 Building 28 – Avis Rent-A-Car

Avis Car Rental service activities include the topping off of vehicle fluids, vehicle washing and detailing, and vehicle storage. Vehicle washing and topping off of fluids occurs within a drive-through, single-bay garage structure. Vehicle wash-water is discharged to a garage floor drain discharging to an O/WS and subsequently to municipal sewer, a similar floor drain is located at the exit of the garage bay to capture residual washwater. All automotive fluids are stored and transferred within the garage-bay. Vacuuming and

surface detailing of vehicles occurs within the garage bay and on the paved surfaces of the parking lot.

7.15.3 Building 28 – Budget Truck Rental

Budget Truck Rental service activities include the topping off of vehicle fluids, vehicle washing and detailing, and vehicle storage. Vehicle washing and topping off of fluids occurs within a drive-through, single-bay garage structure. Vehicle wash-water is discharged to a garage floor drain discharging to an O/WS and subsequently to municipal sewer, a similar floor drain is located at the exit of the garage bay to capture residual washwater. All automotive fluids are stored and transferred within the garage-bay. Vacuuming and surface detailing of vehicles occurs within the garage bay.

7.16 Off-site Potential Pollutant Sources

Airport property shares common borders with several retail businesses and fuel stations located along Iyannough Road and Barnstable Road as indicated on Figure 3. A field inspection of properties sharing a border with the Airport indicated three areas of potential run-on of potential pollutants.

7.16.1 Enterprise Rent-A-Car

Enterprise Rent-A-Car operates a vehicle service bay at 332 Iyannough Road. Activities conducted at the service bay include vehicle washing and interior cleaning, and topping-off of fluids. Washwater from the vehicle service bay could potentially be discharged beneath the Airport's perimeter fence to Class V injection well PR-1. Airport Management requested in writing that this practice be discontinued and vehicle servicing at the 332 Iyannough Road facility is limited to vacuuming and interior detailing.

7.16.2 Cape Cod Linen Service

Cape Cod Linen Service operates a linen supply facility located at 880 Attucks Lane, adjacent to the northern extent of Runway 15/33. Activities conducted at the 1.85-acre property include delivery vehicle loading and unloading. Stormwater discharged from this property could potentially run-on to Airport property, discharging to a drainage depression located approximately 50 feet west of the Taxiway A at the nearest point as indicated on Figure 3. According to the owners, servicing of linens and storage of laundering solutions occurs inside of the building, and potential impacts associated with stormwater discharges from this property are not expected to be significant.

7.16.3 Ricciardi Granite and Marble and Cape Cod Winwater Works

Ricciardi Granite and Marble operates a granite and marble stone distributorship located at 174 Airport Road, adjacent to the northern extent of Runway 15/33. Cape Cod Winwater Works operates a plumbing and water supply distributorship out of a portion of the 174 Airport Road facility and 2.12-acre property. Activities associated with both companies include the outdoor storage of building materials, including pallets of stone, PVC piping and fittings, copper pipe, ductile steel, and water supply fixtures. Stormwater discharged from this property could potentially run-on to Airport property, discharging to a drainage depression located approximately 50 feet west of the Taxiway A at the nearest point as indicated on Figure 3. Potential impacts associated with stormwater discharges from this property are not expected to be significant.

8.0 AREAS OF POTENTIAL RELEASES OF POLLUTANTS

As described in Section 7.0, above, spills or leaks of pollutants associated with Airport and tenant activities have the potential to occur across Airport property. The most likely releases of potential pollutants at the Airport are de minimis releases of aviation fuels during refueling operations or due to aircraft tank expansion venting. Refueling locations are determined based upon the location of aircraft, and occur on the North Ramp, East Ramp, and Main Terminal Apron areas in Drainage Areas B, C, E, F, G, I, J, K and M. Delivery, transfer, and storage of bulk quantities of fuel occur at the Gate F fuel farm and Griffin Avionics pump island in Drainage Areas C and F, and Rectrix / Air Cape Cod fuel farm in Drainage Area K. Structural and non-structural preventative measures have been implemented to minimize the potential for pollutant exposure to stormwater and are described in greater detail in Sections 11.0 and 12.0.

Aircraft transportation accidents also have the potential to result in a release of aviation fuels to paved runways, taxiways, apron areas, and unpaved airfield surfaces. Airport records indicate that major aircraft transportation accidents occur, on average, once every five years. The exact location of a release due to an aircraft transportation accident would determine what, if any, drainage utilities could potentially be impacted.

Deicing activities and washing of aircraft is centralized at the South Ramp deicing pad and is prohibited from all other locations. Preventative measures have been implemented to minimize the potential for pollutant exposure to stormwater and are described in greater detail in Sections 11.0 and 12.0. Salt (calcium chloride) is used sparingly at the Airport, due to corrosion concerns salt is only utilized outside of the airport fence line. Small amounts of salt are stored in packages in a shed adjacent to the Main Terminal building (Building 10) and is only used on walkways and some parking areas within Drainage Area N. The Airport does not have any salt storage piles on site. FAA-approved sand is stored within the ARFF/SRE building for application to airfield

surfaces; used sand is then collected by sweepers. Due to the limited exposure of salt to stormwater, salt is not considered to be a pollutant of concern for the Airport.

In addition to aviation fuels, pollutants associated with aircraft maintenance have the potential to be released during delivery, application, or transfer. Delivery of aircraft maintenance products is typically by common bulk carrier. Delivery and removal of potential pollutants associated with aircraft maintenance activities is not expected to result in a significant exposure to stormwater, given the infrequent nature of product delivery and removal, and the relatively small quantities of products being transferred. Small releases of pollutants during aircraft maintenance typically occur inside the maintenance hangar, and are not expected to result in exposure to stormwater. Potential pollutants may be exposed to stormwater following the completion of maintenance activities, when the aircraft is returned to service or staged on an apron area.

In accordance with Section 10.1 of the SWPPP, allowable non-stormwater discharges from building roofs include condensation from heating, ventilation, and air conditioning (HVAC) systems. Discharge of stormwater from roof areas is not considered to be a potential source of stormwater pollutants.

8.1 Potential Pollutants Associated with Airport Activities

Table 4 lists the potential pollutants associated with each identified activity. The list of potential pollutants includes all materials that have been handled, stored, or disposed at the Airport property.

Table 4: Potential Pollutants Associated with Airport Activities

Industrial Activity	Associated Pollutants
Fuel delivery and transfer	Jet A fuel, low lead fuel, gasoline, and diesel fuel
Vehicle, aircraft, and equipment maintenance	Fuels, oils, hydraulic fluids, solvents, lubricants, sealants, and cleaning compounds
Deicing activities	Deicing fluids (glycol)
Vehicle washing	Fuels, oils, and cleaning solvents
Snow removal activities	Sediment and salts

9.0 REPORTABLE SPILLS AND LEAKS WITHIN THE PREVIOUS THREE YEARS

- In April 2021, a release of approximately three gallons of motor oil and 16 gallons of aviation gas occurred in the grass area near Taxiway D (Figure 2) from

an aircraft. The aircraft experienced difficulty landing, and resulted in a crash by Taxiway D. While the condition of the aircraft was being assessed, a leak occurred from the wing. The release drained from the damaged area onto the pervious ground surface. Airport personnel responded to the crash and spill. Airport personnel notified the Massachusetts Department of Environmental Protection (MassDEP) within two hours of determining the release was reportable. Consistent with the Massachusetts Contingency Plan, a Licensed Site Professional responded to the release to initiate response actions. Approximately 16-cubic yards of impacted soils were excavated and disposed of properly.

- In November 2019, a release of 51 gallons of Jet A fuel occurred at the Gate F Fuel Farm (Figure 2 and 3) from a hand operated pump located within the concrete secondary containment structure. The hand pump was not fully closed after the previous use and was the source of the release. Due to a storm drainage valve being opened, the release drained from the secondary containment structure into an O/WS. Airport personnel responded to the spill and applied absorbents. Airport personnel notified the fire department and the Massachusetts Department of Environmental Protection (MassDEP) within two hours of identifying the release. Clean Harbors and a Licensed Site Professional responded to the release and pumped out and cleaned the O/WS, recovered absorbents, and cleaned the interior of the concrete secondary structure with a citrus based degreaser. The release was contained by the concrete secondary containment and the OW/S and there was no discharge of pollutants to stormwater and/or surface waters. Due to this incident, a new procedure was implemented by the Airport on November 26, 2019 for the operation of the hand pump and storm water drain value at the fuel farm. The new procedure is as follows:

<u>Hand Pump Operation</u>

- Prior to hand pump usage by Airport staff, verify that the stormwater drain valve located adjacent to the secondary containment structure is in the closed position.
- Operate hand pump as necessary to obtain fuel sample.
- After sample collection, verify hand pump is in the closed position.

<u>Stormwater Drain Valve</u>

- Following a rain event, an Airport staff member will perform an inspection of any standing water within the concrete secondary

containment and the drain structures within the concrete containment pad, looking for a sheen or any indications of petroleum. All observations must be recorded in the Rainwater Inspection Form (Appendix B of the SPCCP) which will be kept with the SWPPP in the Main Terminal.

- Once the Airport staff member confirms there are no signs of petroleum, the storm water valve should be opened, and the Airport staff member will monitor the draining of the open manhole as the water moves into the O/WS.

- Once the draining of the secondary containment is completed the stormwater valve is to be closed.

No other releases of pollutants to stormwater drainage utilities have occurred in the last three years. During this time, minor releases of aviation fluids (less than the MassDEP Reportable Quantity of 10-gallons) have occurred to paved surfaces that are exposed to stormwater; however, immediate containment and removal procedures implemented by tenant ARFF/OPS, Maintenance, and tenant personnel prevented subsequent impacts to drainage utilities.

10.0 NON-STORMWATER DISCHARGES EVALUATION

Section 6.2.3.4 of the 2021 MSGP requires an evaluation for the presence of non-stormwater discharges to stormwater drainage utilities. Several inspections of the Airport's drainage utilities have been conducted in recent years in conjunction with the Airport's existing SWPPP, in response to the discovery and subsequent elimination of non-stormwater discharges to drainage utilities, and in preparation for revision of the Airport's SWPPP.

Inspections of Outfalls A, B, and C, located on Upper Gate Pond, and Outfall D, located on Lewis Pond, are conducted on a quarterly basis by Airport Maintenance personnel.

10.1 Allowable Non-Stormwater Discharges

In accordance with the 2021 MSGP, the following non-stormwater discharges are allowed:

- Discharges from firefighting activities;

- Discharges from fire hydrant flushing;

- Discharges from potable water sources, including water line flushing;

- Discharges from irrigation drainage and lawn watering;
- Discharges from routine external building washing that does not use detergents or other compounds;
- Discharges from pavement wash-waters where spills or leaks of potential pollutants have not occurred (unless all spilled material has been removed) and where detergents are not used;
- Discharges from air conditioning condensate;
- Discharges from springs or uncontained groundwater; and
- Discharges from foundation or footing drains where the discharge is not contaminated with pollutants.

10.2 Elimination of Non-Allowable Non-Stormwater Discharges

Non-stormwater discharges that are not authorized under the 2021 MSGP and UIC Program have been eliminated through the closure of hangar floor drains connected to leaching catch basins, and the implementation of a zero discharge policy.

Prior to 1997, site investigation activities at the Airport identified hangar floor drain discharge to Class V injection wells as a source of soil and groundwater contamination, associated with oil and/or solvents from aircraft maintenance activities. Closure of hangar floor drains occurred in conjunction with assessment and remediation of contaminated soil and groundwater source areas associated with these discharges.

Routine inspection of the Airport's stormwater drainage utilities and tenant facilities in 2006 led to the identification of non-stormwater discharges to Class V injection wells adjacent to Hangars 1 and 2. In response, Airport Management instituted a zero discharge policy for all airfield operations, as described in Section 11.1. Regular facility inspections conducted by Airport Management include a visual inspection of hangar floor drains to confirm that all closed drains remain closed.

10.3 Existing Non-Stormwater Discharges

Aircraft washing activities are conducted indoors on Airport property at the Griffin Avionics hangar and the Cape Air Hangar. Vehicle washing activities are conducted indoors at the ARFF/SRE Building, Budget Truck Rental, Avis, and Hertz. These activities are considered non-allowable non-stormwater discharges. All vehicle and aircraft wash water in these locations is collected through floor drains and treated by to O/WS prior to discharging to the municipal sewer in accordance with Section 2.1.2.9 of the 2021

MSGP. Further details regarding these activities and spill path analysis are described in Section 7.

10.4 Snow Removal

All snow removal activities at the Airport follow the FAA-approved Snow & Ice Control Plan. This plan is a chapter of the HYA-specific Airport Certification Manual maintained by the Airport to meet the requirements of the FAA airport certification program. As indicated above, small amounts of salt and sand are stored within the Main Terminal building, and is only used on walkways and some parking areas within Drainage Area N.

The deicing pad falls into the Priority 1 areas along with the balance of the main terminal apron. Snow that falls in this area is moved with a large front-end loader equipped with a 40-foot box plow. The snow is piled at the south end of the apron initially, and then moved and piled into an adjacent drainage basin by a front-end loader with a bucket attachment. Snow removed from this area **does not** come into contact with deicing fluids as is not considered to be contaminated.

The deicing pad is closed during snow removal operations; this is noted on the Snow Report. Once the deicing pad apron is clear of snow it is reopened opened for use. De-icing operations will only occur once the snow has been removed, de-icing operations and snow removal operations on the de-ice pad are not conducted simultaneously.

11.0 NON-STRUCTURAL STORMWATER POLLUTION CONTROL MEASURES

Best Management Procedures (BMPs) incorporated into Airport and tenant activities reduce the likelihood or frequency with which potential pollutants are released to impervious surfaces during normal operations. BMPs implemented by the Airport are described in further detail below.

11.1 Minimization of Stormwater Exposure to Potential Pollutants

Tenant and Airport facilities are prohibited from storing potential pollutants in areas exposed to stormwater. Products associated with maintenance activities and storage areas for waste products are within hangar facilities, minimizing the potential for exposure to stormwater. In a November 20, 2007 memorandum to all Airport tenants, the Airport implemented a zero discharge policy. The policy requires all tenants to utilize the designated deicing pad and prohibits all discharges of aircraft or vehicle wash water, unless the vehicle washing occurs within a hangar, where wash water is collected, treated by O/WS, and discharged to municipal sewer. A copy of the deicing program is included as Appendix D. Airport Management provides frequent reminders of the requirements of the zero discharge policy to Airport tenants. The South Ramp

deicing pad may also be utilized by tenants for the washing of aircraft. Aircraft deicing and washing is monitored by Airport Operations and must be conducted in accordance with the Airports Deicing and Washing Program, described in Section 11.6.

11.2 Facility Maintenance

Facility maintenance practices implemented at Airport and tenant facilities are effective in reducing the cumulative, non-point source impacts associated with site activities by reducing the spread of potential pollutants due to vehicle and foot traffic, reducing the potential for accidental releases of potential pollutants, and aiding in the observation and containment of accidental releases.
Good housekeeping practices currently implemented at Airport and tenant facilities on a regular basis include:

- Keeping impervious surfaces adjacent to buildings free of surface debris with brooms;
- Utilizing absorbent materials and drip pans to contain minor discharges of potential pollutants to facility floors in maintenance areas, and promptly removing and containerizing for proper disposal;
- Keeping facility floors free of surface debris to prevent the spread of potential pollutants due to foot traffic;
- Removing surface debris from runways and taxiways seasonally with a streetsweeper;
- Maintenance of hangar doors and roofs to prevent stormwater from entering the facility during precipitation events;
- Regular garbage and waste container consolidation into common collection containers to encourage proper handling of solid waste;
- Using appropriately sized and constructed containers for the storage of maintenance products or waste products to reduce the potential for a release during storage, application, transfer, or transfer for disposal;
- Maintenance and storage of maintenance products and waste products indoors, properly sealed and labeled to prevent misuse or premature disposal;
- Providing secondary containment for storage of maintenance products or waste products;

- Prohibition of washing of paved surfaces or facility floors resulting in a discharge of wash water to drainage utilities. Washing of facility floors is permitted where wash water is discharged to municipal sewer through a permitted municipal sewer connection or to a tight tank for proper disposal. All other aircraft washing activities are only permitted at the South Ramp deicing pad;

- Performing maintenance activities in authorized indoor areas;

- Maintaining an organized inventory of material used in maintenance areas;

- Inspecting and maintaining existing BMPs, including but not limited to swales, Vortechs units, bioretention areas, infiltration basins, leaching catch basins, O/WS, and chambers;

- Implementing spill and overflow practices at the primary maintenance locations and fueling delivery and transfer locations; and

- Implementation of the SPCCP.

11.3 Equipment Inspection and Maintenance

The Airport and tenants conduct regular inspections of all fuel storage tanks, fuel transfer equipment, and mobile refuelers. Inspections are conducted by properly trained personnel. Fuel farm and mobile refueler inspection schedules and items are summarized below. Snow removal, airfield maintenance, and ground equipment is inspected prior to use and during routine maintenance to identify any maintenance deficiencies and ensure proper operation. Routine inspections are likely to reveal a condition that would result in a release of potential pollutants (i.e., hydraulic or engine oil leak). In the event that maintenance is required, the equipment in need of service is removed from service until repairs have been made.

On a daily basis, mobile refuelers are inspected for:

- General condition, filter sumps, filter differential pressure, deadman control operation, brake interlocks, nozzle fueling pressure, hoses, swivels and nozzles, ground reels, cables and clamps, fire extinguishers, tanker troughs, tanker sumps, condensation in air tanks, ladders, mechanics tools, and diesel fuel level.

On a daily basis, the following areas at the Airport Fuel Farm are inspected:

- Tank sumps, fuel sumps, filter sumps, hoses, swivels, and nozzles, ground reels, cables and clamps, fire extinguishers, waste fuel tanks, differential pressure, and primary pressure.

On a monthly basis, mobile refuelers are inspected for:

- Filtration test, grounding cable continuity test, nozzle screens, signs and placards, meter seals, emergency shutdown system, tanker interiors, tanker vents and dome covers, tanker trough drains, and fire extinguishers.

On a monthly basis, the Airport fuel farm is inspected for:

- Grounding cable continuity, nozzle screens, signs and placards, floating suctions, and fire extinguishers.

On a quarterly basis, mobile refuelers are inspected for:

- General condition, pressure controls, secondary pressure, and water defense system.

On a quarterly basis, the Airport Fuel Farm is inspected for:

- Tank high level controls, emergency shutdown system, and water defense system.

On an annual basis, mobile refuelers are inspected for:

- Filter elements, pressure gauges, and fuel meters.

On an annual basis, the Airport fuel farm is inspected for:

- Interior tank condition, pressure gauges, filter elements, line strainers filter/separator heaters, tank vents, tank high level controls, and facility condition.

Tenants are required to maintain all equipment in good operational condition, and conduct regular inspections of any fuel storage or transfer areas in accordance with State, Federal, or FAA requirements. Any deficiencies in tenant owned or operated equipment that are observed by Airport personnel are reported to the tenant immediately.

11.4 Drainage Utilities Maintenance

The Airport is responsible for maintaining approximately 300 catch basins and 85 Class V injection wells located across Airport property. All entry points into drainage utilities

are equipped with steel grates to prevent large debris from entering the drainage structure. The majority of catch basins comprising the drainage system discharging to surface water also feature a sump to trap coarse solids and debris able to pass through the steel grate.

Annual maintenance of the drainage utilities includes the removal of sediment and debris collected in catch basin sumps to maintain efficient removal of stormwater during peak runoff events. Annual maintenance activities are concentrated on areas determined to require frequent maintenance, portions of the Airport's drainage system require less frequent inspection and maintenance. O/WS are inspected and cleaned as needed. Class V injection wells discharging directly to the subsurface are also inspected and maintained on an annual basis to ensure efficient leaching at the base of the drainage structure.

11.5 Spill Prevention Control and Countermeasure Plan

Under Code of Federal Regulations 40, Subpart 112 (40 CFR 112) the Airport is required to develop and implement a SPCCP. The Airport's SPCCP establishes procedures and methods to prevent facility discharges of oil into surface waters and adjoining shorelines. Additionally, Massachusetts State regulations (310 CMR 30.521(4)) require SPCCPs, with added requirements to comply with State 310 CMR 30 Hazardous Waste regulations. The Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Regulation 40 CFR 300.3, and the Resource Conservation and Recovery Act (RCRA) Regulation 40 CFR 264.52 expand the scope of the SPCCP to incorporate hazardous materials as defined in 40 CFR 302.3. A copy of the SPCCP is included in Appendix E.

The Airport's SPCCP provides information critical to the prevention of, and response to, releases of oil and/or hazardous materials at the Airport, and includes discussions of tenant operations, storage facilities, and transfer procedures. The Airport assumes no liability or responsibility for tenant operational compliance with applicable Local, State, and Federal Regulations, including the requirements established in 40 CFR 112, and described in the SPCCP. Tenant operations meeting the materials storage thresholds established in 40 CFR 112 are required to maintain a SPCCP independently of the Airport's SPCCP. Copies of the Airport's SPCCP and associated Emergency Response Action Plan are maintained at the Airport Manager's office and ARFF/OPS and Maintenance offices.

The Airport's SPCCP establishes measures to prevent releases, and procedures for responding to, releases of oil or hazardous materials, including:

- Procedures for material storage and labeling;

- Procedures for delivery of fuel from vendors;
- Procedures for the refueling of aircraft;
- Spill response procedures;
- Secondary containment requirements in material storage areas; and
- Emergency notification procedures for facility personnel, emergency response personnel, and applicable regulatory agencies.

11.6 Aircraft Deicing and Washing Program

The Airport has implemented an Aircraft Deicing and Washing Program establishing procedures for Airport and tenant personnel during use of the South Ramp pad for aircraft deicing or washing. A copy of the Airport's Aircraft Deicing and Washing Program is included as Appendix D.

The South Ramp Deicing and Washing Pad was constructed by the Airport to provide tenants and aircraft operators with a central location to complete these activities, and reduce the potential for environmental impacts. The MassDEP, Cape Cod Commission (CCC), Barnstable Department of Public Works (DPW), and Barnstable WPCF have reviewed the construction plans and may conduct further review and/or inspection of the operations and record keeping procedures. Compliance with the procedures and requirements established in the Program is necessary to avoid increased oversight or potential penalties from these agencies.

Aircraft deicing is typically necessary at the Airport between the months of October and March. As required under the 2021 MSGP, tenants are required to maintain a record of deicing chemical usage, and report that amount to the Airport Manager's office on a monthly basis. The Airport will report the cumulative deicing chemical used during the prior year in the Annual Report.

11.7 Employee Training

Employee training programs shall inform personnel responsible for implementing activities identified in the stormwater pollution prevention plan or otherwise responsible for stormwater management of the components and goals of this SWPPP. Training includes spill prevention and emergency response, good housekeeping practices, fueling procedures, and waste oil and hazardous waste management practices. These trainings are to be held annually and within 30 days of any revision to the SWPPP or change in facility design or construction that would affect stormwater

discharges. Pollution prevention team members shall meet at least twice a year to discuss facility operations and determine if revisions to the SWPPP are necessary.

The Airport conducts several different formal and informal training events to promote operational compliance with the elements of the SWPPP, SPCCP, and state and federal hazardous materials handling and disposal regulations. Federal regulations 14 CFR Section 139.321 (e) (1) further requires that all Airport employees who fuel aircraft, accept fuel shipments, or otherwise handle fuel receive at least initial on-the-job training and recurrent instruction every 12 consecutive calendar months in fire safety from a trained supervisor. An employee training log will be kept with the SWPPP in the Main Terminal.

12.0 STRUCTURAL STORMWATER POLLUTION CONTROL MEASURES

A variety of structural controls and management practices have been implemented at the Airport to reduce the amount of stormwater discharged to surface waters. As discussed in Section 7.0, stormwater from several drainage areas is discharged to Class V injection wells that infiltrate directly into the subsurface. Construction and redevelopment of the Main Terminal, access road, and parking facilities in recent years has relied upon the installation of Class V injection wells, bioretention basins, and infiltration basins to accommodate stormwater drainage and reduce stormwater discharges to the ponds. Additional structural controls implemented at the Airport to reduce stormwater pollution are described in further detail below.

12.1 Area 7 – Gate F Fuel Farm

The Gate F fuel farm is utilized for the storage and transfer of Jet A, diesel, and unleaded gasoline fuels. Fuel storage containers feature secondary containment, overfill protection, interstitial monitoring, and cathodic protection. Fuel transfer procedures at the Gate F fuel farm occur on paved surface draining to two catch basins, which subsequently discharge to an O/WS. Spill response resources including catch basin covers, absorbent materials, and a pop up pool are maintained in weatherproof containers at the Gate F fuel farm for rapid deployment. A new fuel farm facility was constructed Gate F Fuel Farm in 2016. The new fuel farm features three 20,000-gallon ASTs containing Jet A and Avgas. The ASTs feature leak detection monitoring and secondary containment. The ASTs and all associated transfer piping are located within a concrete containment pad that has sufficient capacity to contain a release of the entire contents of one of the ASTs. The fuel transfer area, where fuel delivery trucks and mobile refuelers are parked during transfers, drains into the concrete containment pad. A shut off valve was installed in the case of a release. Stormwater collected within the containment pad is inspected for signs of pollutants by Airport personnel prior to

being discharged to an O/WS and the Airport stormwater system. The Gate F Fuel Farm is designated as Area 7 in the buildings/areas table on Figure 3.

12.2 Area 16 – Rectrix / Air Cape Cod Fuel Farm

The Rectrix / Air Cape Cod fuel farm is currently utilized for the storage and transfer of Avgas and Jet A fuels and features secondary containment and overfill protection. Spill response resources maintained in a weatherproof container at the facility include magnetic catch basin covers and absorbent materials. The Rectrix Aviation fuel farm is located approximately 500 feet east of the ARFF/SRE building, and additional response resources that are stationed there could be rapidly deployed in the event of a release.

12.3 Area 4 – Griffin Avionics Fuel Farm

The Griffin Avionics fuel farm is utilized for the storage and transfer of Avgas, and features overfill protection, cathodic protection, and leak detection. Spill response resources maintained at the facility include absorbent materials. A release from the Griffin Avionics fuel farm would not have the potential to discharge to Upper Gate or Lewis Ponds, as the drainage structures for this area infiltrate directly into the subsurface at the Griffin Lot.

12.4 Oil/Water Separators (O/WS)

There are several O/WS located across the airport. The Cape Air Hangar and the Griffin Hangar (Buildings 2 and 3, respectively) each have an O/WS to accommodate any discharges from inside the hangars, where maintenance activities occur. There is a network of catch basins north of 600 Barnstable Road which discharge to another O/WS before discharge to a leaching basin. There are two O/WS to address stormwater discharges surrounding the Gate F Fuel Farm, detailed above in Section 12.1. Stormwater discharges from the South Ramp are directed to an additional O/WS located near the South Ramp deicing pad. The ARFF/SRE Facility (Building 14) also has an O/WS to accommodate any discharges from inside the building, where maintenance activities occur.

12.5 Deicing Location Pollution Control Measures

Deicing operations are conducted at the South Ramp. Due to the decreased environmental impacts over alternative formulations, the Airport currently requires all tenants to utilize Type I propylene glycol based deicing fluids. The paved apron in the South Ramp Deicing Pad drains to a single, centrally located catch basin that discharges to the Barnstable WPCF during aircraft deicing or washing. During all other times, this

same catch basin discharges to the Airport's stormwater conveyance system that ultimately discharges to Upper Gate Pond. The discharge system is controlled through a series of manual gate valves that are operated by Airport Operations personnel. Notification of Airport Operations prior to deicing or washing is required, to confirm that the system is discharging to the WPCF. Additional information is provided in the Airport's Deicing Program (Appendix D).

12.6 Erosion and Sediment Controls

12.6.1 Temporary Erosion and Sediment Controls

Temporary erosion and sediment controls (E/SC) are implemented to prevent sediment from entering the stormwater drainage system during construction activities. Temporary BMPs used at the Airport include but are not limited to silt socks, silt fences, inlet protection, and stabilized construction entrances. BMPs are selected by an engineer completing the work and are implemented prior to construction.

12.6.2 Post-Construction Erosion and Sediment Controls

There are approximately 300 catch basins located across Airport property. All entry points into drainage utilities are equipped with steel grates to prevent large debris from entering the drainage structure. The majority of catch basins comprising the drainage system discharging to surface water also feature a sump to trap coarse solids and debris able to pass through the steel grate.

Post-construction BMPs include but are not limited to swales, bioretention areas, infiltration basins, catch basins with sediment traps, O/WS, and Vortechs® hydrodynamic separators. Stormwater from the following areas is collected through a network of catch basins and is treated by Vortechs® hydrodynamic separators prior to discharge to an outfall:

- Stormwater from Drainage Area A is collected through a network of catch basins and is treated by a Vortechs® hydrodynamic separator prior to discharge to Outfall A, located on Upper Gate Pond. Calculated TSS removal rates for these water quality units range from 81% to 87% with TPH removal at 67%. Since the installation of the Vortechs® units in 2011, 100% of stormwater discharged to the ponds receives pretreatment.

- Stormwater from Drainage Area B is collected through a series of catch basins and is treated by a Vortechs® hydrodynamic separator prior to discharge to Outfall D, located on Lewis Pond. Calculated TSS removal rates for these water quality units range from 81% to 87% with TPH removal at 67%. Since the

installation of the Vortechs® units in 2011, 100% of stormwater discharged to the ponds receives pretreatment.

- Stormwater from Drainage Area C is collected through a network of catch basins discharging to Outfalls B and C, located on Upper Gate Pond. Prior to discharge at either outfall, stormwater is treated by a Vortechs® hydrodynamic separator. Calculated TSS removal rates for these water quality units range from 81% to 87% with TPH removal at 67%. Since the installation of the Vortechs® units in 2011, 100% of stormwater discharged to the ponds receives pretreatment.

- Stormwater from these impervious surfaces in Drainage Area D is collected through a network of catch basins discharging to Outfall D, located on Lewis Pond, and Class V injection wells discharging directly to the subsurface. Prior to discharge from Outfall D, stormwater is treated by a Vortechs® hydrodynamic separator (Figure 3). Calculated TSS removal rates for these water quality units range from 81% to 87% with TPH removal at 67%. Since the installation of the Vortechs® units in 2011, 100% of stormwater discharged to the ponds receives pretreatment.

12.7 Spill Response Resources

In addition to the facility specific spill response resources described above, ARFF/OPS maintains a rapid deployment trailer outfitted with magnetic catch basin covers, pop up pools, absorbent materials, non-sparking hand tools, and personnel protective equipment. Smaller quantities of spill response resources are maintained on ARFF/OPS vehicles.

ARFF/OPS and Maintenance personnel designated to respond to spills maintain Occupational Safety and Health Administration (OSHA) required hazardous waste operations training (HAZWOPER) and are familiar with emergency spill response procedures and emergency notification procedures.

13.0 MONITORING PROGRAM

Airport Management conducts regular formal and informal inspections of tenant operations to ensure operational compliance with the zero discharge policy and the Airport's SWPPP and SPCCP. In accordance with Part 3 of the 2021 MSGP, the Airport must conduct routine facility inspections and quarterly visual assessments of stormwater discharges, and document those inspections. Monitoring requirements are described in greater detail in Sections 13.1, 13.2, 13.3, and 13.4.

Under Part 8, Subpart S of the 2021 MSGP, airports exceeding the deicing chemical usage thresholds of 100,000 gallons of glycol and/or 100 tons of urea deicing fluids must conduct benchmark sampling of stormwater discharges. On average, annual tenant deicing operations at the Airport utilize approximately 40 gallons of propylene glycol deicing fluids, excluding the Airport from having to conduct benchmark sampling.

13.1 Routine Facility Inspections

13.1.1 Routine Facility Inspection Procedures

The Airport is required to conduct routine facility inspections of all areas of the facility where industrial materials or activities are exposed to stormwater, areas identified in the SWPPP, areas identified as potential sources of pollution, discharge points, and all stormwater control measures, on a quarterly basis, and on **a monthly basis** during the deicing season (any month during which deicing chemicals are applied). The routine facility inspections must be performed during normal operational periods, and must be conducted by qualified personnel, as defined in Appendix A Section A.1. of the 2021 MSGP (Appendix A), with at least one member of the Airport's stormwater pollution prevention team participating. At least once each calendar year, the routine facility inspection must be conducted during a period when a stormwater discharge is occurring. At least one Routine Facility Inspection must be conducted when deicing of aircraft is occurring.

13.1.2 Routine Facility Inspection Documentation

The Airport is required to document the findings of each routine facility inspection performed and maintain the documentation onsite with the SWPPP as required in Part 3.1.6 of the 2021 MSGP. The Airport is not required to submit routine facility inspection findings to EPA, unless specifically requested to do so. A Routine Facility Inspection report form (NPDES – 1) is included as Appendix F. At a minimum, documentation of each routine facility inspection shall include:

Routine facility inspections shall be conducted by the Program Manager or Coordinator or designated staff at least four times a year, and monthly during the deicing season. Routine facility inspections shall include a visual inspection of the following:

- Areas associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Determine if control measures to reduce pollutants are implemented in accordance with the terms of the permit, or whether additional control measures are needed. Structural stormwater management measures, sediment and erosion control measures, post-construction BMPs, and other

structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.

- Based on the results of the inspection, the description of potential pollutant sources identified in the plan and pollution prevention measures and controls identified in the plan shall be revised as appropriate within 14 days of such inspection and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than 90 days after the inspection.

- A report summarizing the scope of the inspection, personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the stormwater pollution prevention plan, and actions taken in accordance with the permit shall be made a part of the stormwater pollution prevention plan and retained as required. Control measures needing replacement, maintenance or repair shall be documented. The report shall identify any incidents of noncompliance and be certified by a responsible corporate officer.

13.2 Visual Assessment of Stormwater Discharges

On a quarterly basis, the Airport is required to collect a stormwater sample from each outfall and conduct a visual assessment of each sample. The visual assessment must be conducted by qualified personnel as defined in Appendix A Section A.1. of the 2021 MSGP (Appendix A), with at least one member of the Airport's stormwater pollution prevention team participating.

13.2.1 Visual Assessment Procedures

Stormwater discharge samples must be collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes and the Airport must document why it was not possible to take samples within the first 30 minutes. Stormwater discharge sampling shall not occur within 72 hours (three days) of a previous storm event.

The visual inspection must be made of a sample in a clean, colorless glass or plastic container, and examined in a well-lit area. The sample must be visually inspected for the following water quality characteristics:

- Color;

- Odor;
- Clarity (diminished);
- Floating solids;
- Settled solids;
- Suspended solids;
- Foam;
- Oil sheen; and
- Other obvious indicators of stormwater pollution.

Visual assessments must be conducted quarterly. Monitoring requirements begin in the first full quarter following either May 30, 2021 or the date of discharge authorization, whichever date comes later. According to Section 3.2.4.3 of the MSGP, at least one quarterly visual assessment must capture snowmelt discharge. Quarterly monitoring must be performed at least once in each of the following 3-month intervals during each year of permit coverage:

- January 1 – March 31;
- April 1 - June 30;
- July1 – September 30; and
- October 1 – December 31

13.2.2 Visual Assessment Documentation

The Airport is required to document the results of visual assessments and maintain the documentation on-site with the SWPPP. The Airport is not required to submit documentation of visual assessment findings to EPA, unless specifically requested to do so. Any deviations from the schedule for visual assessments and/or monitoring must be documented, along with the reason for the deviations. A Quarterly Visual Inspection report form (NPDES – 2) is included as Appendix G. At a minimum, documentation of the visual assessment must include:

- Sample location(s);
- Sample collection date and time;

- Visual assessment date and time for each sample;
- Personnel collecting the sample and performing visual assessment, and their signatures;
- Nature of the discharge (i.e., runoff or snowmelt);
- Results of observations of the stormwater discharge;
- Probable sources of any observed stormwater contamination; and
- If applicable, why it was not possible to take samples within the first 30 minutes of stormwater discharge.

13.3 Indicator Monitoring

Beginning the first full quarter of permit coverage, on a bi-annual basis, during the first and fourth years of permit coverage, the Airport is required to collect a stormwater sample from each outfall and conduct indicator monitoring of stormwater discharges for the 16 individual polycyclic aromatic hydrocarbons (PAHs) identified at Appendix A to 40 CFR Part 423. These analytes include the following: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

13.3.1 Indicator Monitoring Procedures

Stormwater discharge samples must be collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes and the Airport personnel must document why it was not possible to take samples within the first 30 minutes. Stormwater discharge sampling shall not occur within 72 hours (three days) of a previous storm event. Indicator monitoring must be conducted quarterly. Samples must be analyzed using EPA Method 625.1, or EPA Method 610/Standard Method 6440B if preferred by the operator, consistent with 40 CFR Part 136 analytical methods.

Monitoring requirements begin in the first full quarter following either May 30, 2021 or the date of discharge authorization, whichever date comes later. Biannual monitoring must be performed at least once in each of the following intervals during the first and fourth years of permit coverage:

- May 30, 2021 – October 30, 2021;

- November 1, 2021 – April 30 2022;
- July 1, 2024 – November 30, 2024; and
- December 1, 2024 – May 30, 2025.

As stated by Section 4.1.6, when freezing conditions exist that prevent discharges from occurring for extended periods, required monitoring events may be distributed during seasons when precipitation occurs, or when snowmelt results in a measurable discharge. The required number of samples must still be collected.

13.3.2 Indicator Monitoring Reporting

The Airport is required to report the results of indicator monitoring. Any deviations from the schedule for monitoring must be documented, along with the reason for the deviations. As specified in Part 7.4 of the 2021 MSGP, deviations from the monitoring schedule due to freezing conditions must be indicated in Net-DMR.

The Airport is required to report monitoring data using Net-DMR, EPA's electronic DMR tool, as described in Part 7.3 of the 2021 MSGP. An Indicator Monitoring report form (NPDES – 3) is included as Appendix H. At a minimum, the report must include:

- Sample location(s);
- Sample collection date and time;
- Duration (in hours) of rainfall event;
- Rainfall total (in inches) for that rainfall event;
- Time (in days) since the previous measurable storm event;
- Nature of the discharge (i.e., runoff or snowmelt);
- If applicable, why it was not possible to take samples within the first 30 minutes of stormwater discharge.
- If applicable, any deviations to the monitoring schedule due to freezing conditions.

The indicator monitoring parameters are "report-only" and do not have thresholds or baseline values for comparison, therefore no follow-up action is triggered or required under Section 4.2.1 of the 2021 MSGP. In the event that monitoring results are unable

to be electronically reported in Net-DMR, operators must maintain monitoring results and records within the SWPPP.

13.4 Annual Reporting

To maintain compliance with the MSGP, the Airport must submit an Annual Report to EPA electronically by January 30th for each year of permit coverage. The Annual Report must contain the following information generated from the prior calendar year:

- A summary of the prior year's routine facility inspection documentation. The Airport is not subject to the airport effluent limitations guidelines and must certify annually that pavement deicers containing urea are not used at the Airport.

- A summary of the prior year's quarterly visual assessment documentation.

- A summary of the Airport's past year's corrective action documentation (Part 5 of the MSGP). If corrective action is not yet completed at the time of submission of the Annual Report, Airport Management must describe the status of any outstanding corrective action(s). Airport Management must also describe any incidents of noncompliance in the past year or currently ongoing, or if none, provide a statement that the Airport is in compliance with the permit.

- The Annual Report must also include a statement, signed and certified in accordance with Appendix B, Subsection 11 of the 2021 MSGP (Appendix A).

14.0 Documentation to Support Eligibility Considerations Under Other Federal Laws

Along with the SWPPP, the following additional documents will be kept with the SWPPP to demonstrate full compliance with the permit:

- Copy of the NOI submitted to EPA along with any correspondence between the Airport and EPA specific to coverage under the permit;

- Copy of the acknowledgement the Airport receives from the EPA assigning the NPDES ID;

- Copy of the permit;

- Copy of the SPCCP;

- Documentation of maintenance and repairs of control measures, including the date(s) of regular maintenance, date(s) of discovery of areas in need of

repair/replacement, and for repairs, date(s) that the control measure(s) returned to full function, and the justification for any extended maintenance/repair schedules;

- All inspection reports, including the Routine Facility Inspection Reports and Quarterly Visual Assessment Reports;

- Description of any deviations from the schedule for visual assessments and/or monitoring, and the reason for the deviations (e.g., adverse weather or it was impractical to collect samples within the first 30 minutes of a measurable storm event); and

- Corrective action documentation.

15.0 REFERENCES

Horsley Witten Group, Inc. December 2013. Stormwater Pollution Prevention Plan, Barnstable Municipal Airport.

Horsley Witten Group, Inc. December, 2013. Spill Prevention Control and Countermeasures Plan, Barnstable Municipal Airport.

Federal Aviation Administration. FAR 139 Airport Certification Manual, Barnstable Municipal Airport.

Massachusetts Department of Environmental Protection. April, 2014. Massachusetts Contingency Plan: Massachusetts Department of Environmental Protection, Bureau of Waste Site Cleanup, 310 CMR 40.0000.

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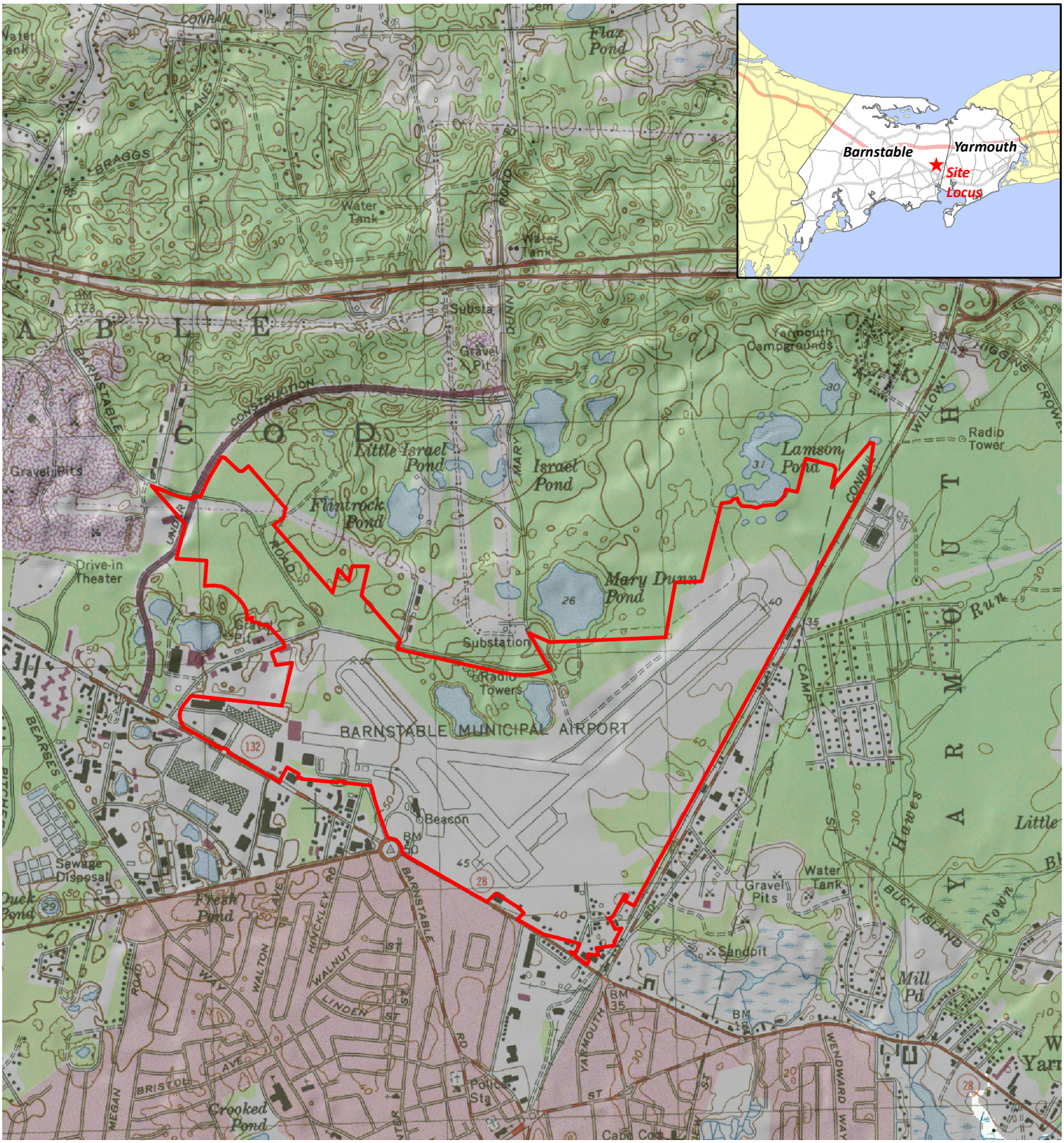
Massachusetts Department of Environmental Protection. 2000. Massachusetts Hazardous Waste Regulations: Massachusetts Department of Environmental Protection, 310 CMR 30.

U.S. Environmental Protection Agency. Code of Federal Regulations 40 CFR 112.

U.S. Environmental Protection Agency. National Pollutant Discharge Elimination System, Multi-Sector General Permit, 2021.

FIGURES



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Legend

*2016 NAIP imagery service

Cape Cod Gateway Airport Property Boundary

N

0 2,000

1" = 2,000 feet

Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A • Unit 1 • Sandwich, MA 02563
508-833-6600 • horsleywitten.com

USGS Locus
Cape Cod Gateway Airport
Hyannis, MA

Date: 11/18/2019

Figure 1

*Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Israel Pond
Flint Rock Pond
Lamson Pond
Mary Dunn Pond
Upper Gate Pond
Lewis Pond

THORNTON DRIVE
INDEPENDENCE DRIVE
BREEDS HILL ROAD
KIDDS HILL ROAD
SOUTH FLINT ROCK ROAD
MARY DUNN ROAD
WILLOW STREET
ATTUCKS LANE
AIRPORT ROAD
JEFFERSON AVENUE
COOLIDGE ROAD
GRANT ROAD
ADAMS ROAD
WASHINGTON AVENUE
BARNSTABLE ROAD
IYANNOUGH ROAD
YARMOUTH ROAD
ROSARY LANE
BUCHANAN ROAD
LINCOLN AVENUE
CAMP STREET
CORPORATION STREET
WAREHOUSE ROAD
BUCK ISLAND ROAD
MILL POND VILLAGE
HIRAM AR ROAD
ALICIA ROAD
BEARSES WAY
QUAKER ROAD
WALTON AVENUE
COMPASS CIRCLE
HINCKLEY ROAD
BAXTER ROAD
LEWIS ROAD
WALNUT STREET
SPRUCE STREET
KINGS WAY
SPRING STREET
ENGINE HOUSE ROAD

Cape Cod Linen Service

Ricciardi Granite and Marble
and
Cape Cod Winwater Works

Rectrix aircraft storage area

Cape Air maintenance and aircraft storage area

Griffin maintenance and aircraft storage area

Griffin Fuel Island
- Two 10,000-gal USTs of LL Fuel

Hertz
10,000-gal UST of gasoline

Gate F Fuel Farm
- Three 20,000-gal ASTs of Jet A fuel
- One 4,000-gal AST of gasoline
- One 4,000-gal AST of diesel
- 11/2019 Spill of 51-gal of Jet A fuel

Allies Air maintenance area

Central deicing pad

4/2021 Spill of 3-gal of motor oil and 16-gal of Avgas

Aircraft storage hangars

Indoor vehicle washing (Hertz, Budget Rental, and Avis)

Enterprise Rent-A-Car

Air Cape Cod Fuel Farm
- One 10,000-gal AST of Jet A fuel
- One 10,000-gal AST of LL fuel

Airport Maintenance Building
- heavy machinery and vehicle storage
- 150-gal and 350-gal waste oil tank

Legend

Cape Cod Gateway Airport Property Boundary

DEP

Wooded

Open

Shoreline

Hydrologic Connection

Wetland

Closure Line

NHESP Priority Habitats of Rare Species

NHESP Estimated Habitats of Rare Wildlife

N

0 800

1" = 800 feet

Property = 645 acres

Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A • Unit 1 • Sandwich, MA 02563
508-833-6600 • horsleywitten.com

Site Map
Cape Cod Gateway Airport
Hyannis, MA

Date: 5/26/2021

Figure 2

*Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

*2016 NAIP imagery service

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last modified: 01/16/20 printed: 01/16/20 by ln H:\Projects\HYA\14105 BMA On-Call Eng Services\SWPPP\Drawings\Current Drainage Plan\151229 - Drainage Plan.dwg

DRAINAGE AREA A

DRAINAGE AREA E

DRAINAGE AREA F

DRAINAGE AREA G

DRAINAGE AREA O

DRAINAGE AREA N

DRAINAGE AREA C

DRAINAGE AREA B

DRAINAGE AREA D

DRAINAGE AREA M

DRAINAGE AREA H

DRAINAGE AREA I

DRAINAGE AREA J

DRAINAGE AREA K

DRAINAGE AREA L

VORTECHS WATER QUALITY UNIT

VORTECHS WATER QUALITY UNITS

MARY DUNN POND

LEWIS POND

UPPER GATE POND

MAIN TERMINAL APRON

EAST RAMP APRON

RUNWAY 15/33 (5252' X 150')

RUNWAY 6/24 (5425' X 150')

TAXIWAY A

TAXIWAY B

TAXIWAY C

TAXIWAY D

INFILTRATION BASIN

UNDERGROUND RECHARGE STRUCTURES

DISCHARGE CONTROL VALVE

D/WS AND PUMP STATION

LEGEND

RW1533-29 CB: Catchbasin
RW1533-29 LCB: Leaching Catchbasin
RW1533-29 LCB/RD: Leaching Catchbasin / Roof Drain
RW1533-29 LCB/UGDC: Leaching Catchbasin with Underground Discharge Chamber
RW1533-29 LB: Leaching Basin with No Catchment
O/WS: Oil Water Separator
Airport Property Line
BIO: Bioretention Basin
T31 VORTECH: CONTECH Water Quality Structure

NOTE:

All locations of buildings, utilities, and surface features derived from Town of Barnstable, Massachusetts, Geographic Information System. Location and nature of stormwater utilities based upon data provided by Edwards and Kelcey Barnstable Municipal Airport Drainage Plan (07/07), and field inspection of select utilities by Horsley Witten on July 15, 2008.

AIRPORT BUILDINGS/AREAS TABLE

NO.	BUILDING
1	RECTRIX AERODOME CENTER HANGAR
2	CAPE AIR/NANTUCKET AIR HANGAR
3	GRIFFIN AVIONICS
4	GRIFFIN AVIONICS FUEL STATION
5	SPECIALIZED AUTOMOTIVE
6	HANGAR 2 – CAPE AIR / AIRPORT MAINTENANCE
7	GATE F FUEL FARM
8	HANGAR BUILDING (VACANT)
9	ALLIES AIR
10	MAIN TERMINAL BUILDING
11	MAIN TERMINAL GENERATOR
12	AIR TRAFFIC CONTROL TOWER (ATCT)
13	SOUTH RAMP DEICING PAD
14	AIRPORT ARFF/SRE FACILITY
15	RECTRIX/AIR CAPE COD
16	RECTRIX/AIR CAPE COD FUEL FARM
17	AIRPORT LIGHTING VAULT
18	BMA T-HANGAR
19	AMA NANTUCKET INC.
20	CAPEFLIGHT INSTRUCTION
21	HYANNIS HANGAR LLC
22	HEXAGON HANGAR
23	KINGSBURY AVIATION (BUILDING 1)
24	KINGSBURY AVIATION (BUILDING 2)
25	STEAMSHIP AUTH. PARKING LOT
26	HERTZ CAR WASH
27	AVIS CAR WASH
28	BUDGET TRUCK RENTAL

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

Horsley Witten Group
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90 Route 6A
Sandwich, MA 02563
508-833-6600 voice
508-833-3150 fax

Designed By: GWTH
Drawn By: GWTH
Checked By: JEL
Date: 5/26/2021

Plan Title:

SITE PLAN
CAPE COD GATEWAY AIRPORT
HYANNIS, MA

Prepared For:
Cape Cod Gateway Airport
480 Barnstable Road
Hyannis, MA 02601
(508) 775-2020

Revisions

1	12-27-17	ERK	Update to Drainage Plan
2	4-13-18	JEL	Update to Drainage Plan
3	4-27-18	GH	Update to Drainage Plan
4	1-25-19	JEL	Update to Drainage Plan
5	7-29-19	GH	Update to Drainage Plan
6	9-30-19	JEL	SWPPP Figure 3
7	12-26-19	GH	SWPPP Figure 3
8	12-31-19	JEL	SWPPP Figure 3
9	1-16-20	LEN	Update to Drainage Plan

Project Number: 14105

Figure: 3

APPENDIX A

2021 MULTI-SECTOR GENERAL PERMIT (MSGP)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA)
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
MULTI-SECTOR GENERAL PERMIT (MSGP)
FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

In compliance with the provisions of the Clean Water Act (CWA), as amended (33 U.S.C. 1251 et seq.), operators of stormwater discharges associated with industrial activity located in an area identified in Appendix C where EPA is the permitting authority are authorized to discharge to waters of the United States in accordance with the eligibility and Notice of Intent (NOI) requirements, effluent limitations, inspection requirements, and other conditions set forth in this permit. This permit is structured as follows:

- **Parts 1-7:** General requirements that apply to all facilities;
- **Part 8:** Industry sector-specific requirements;
- **Part 9:** Specific requirements that apply in individual states and Indian country; and
- **Appendices A through P:** Additional permit conditions that apply to all operators covered under this permit.

This permit becomes effective on **March 1, 2021.** This permit and the authorization to discharge shall expire at 11:59 pm eastern time, **February 28, 2026.**

Signed and issued this 15th day of January 2021

DENNIS DEZIEL
Digitally signed by DENNIS DEZIEL
Date: 2021.01.15 11:27:28 -05'00'

Dennis Deziel,
Regional Administrator, EPA Region 1.

Signed and issued this 15th day of January 2021

CHARLES MAGUIRE
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Charles Maguire,
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Signed and issued this 15th day of January 2021

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Jeffrey Gratz,
Deputy Director, Water Division, EPA Region 2.

Signed and issued this 15th day of January 2021

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Jeffery Robichaud,
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Signed and issued this 15th day of January 2021

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Carmen R. Guerrero-Perez,
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Signed and issued this 15th day of January 2021

DARCY OCONNOR
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Darcy O'Connor,
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Catherine A. Libertz,
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Signed and issued this 15th day of January 2021

TOMAS TORRES
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Tomás Torres,
Director, Water Division, EPA Region 9.

Signed and issued this 15th day of January 2021

JEANEANNE GETTLE
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Jeaneanne Gettle,
Director, Water Division, EPA Region 4.

Signed and issued this 15th day of January 2021

DANIEL OPALSKI
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Daniel D. Opalski,
Director, Water Division, EPA Region 10.

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Tera L. Fong,
Director, Water Division, EPA Region 5.

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1 How to Obtain Coverage Under the 2021 MSGP

To be covered under this permit, you must meet all of the eligibility conditions and follow the requirements for obtaining permit coverage in Part 1.

1.1 Eligibility Conditions

1.1.1 Location of Your Facility. Your facility must be located in an area where EPA is the permitting authority and where coverage under this permit is available (see Appendix C); [1]

1.1.2 Your Discharges Are Associated with Industrial Activity. Your facility must have an authorized stormwater discharge or an authorized non-stormwater discharge per Part 1.2 associated with industrial activity from your primary industrial activity (as defined in Appendix A and as listed in Appendix D), or you have been notified by EPA that you are eligible for coverage under Sector AD.

1.1.3 Limitations on Coverage. Discharges from your facility are **not**:

1.1.3.1 Discharges mixed with non-stormwater discharges. Discharges mixed with non-stormwater discharges other than those mixed with authorized non-stormwater discharges listed in Part 1.2.2, and/or those mixed with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES authorization.

1.1.3.2 Stormwater discharges associated with construction activity. Stormwater discharges associated with construction activity disturbing one acre or more, or that are part of a larger common plan of development or sale if the larger common plan will ultimately disturb one acre or more, unless in conjunction with mining activities or certain oil and gas extraction activities as specified in Sectors G, H, I, and J of this permit.

1.1.3.3 Discharges already covered by another NPDES permit. Unless you have received written notification from EPA specifically allowing these discharges to be covered under this permit, you are not eligible for coverage under this permit for any of the following:

a. Stormwater discharges associated with industrial activity that are currently covered under an individual NPDES permit or an alternative NPDES general permit;

b. Stormwater discharges covered within five years prior to the effective date of this permit by an individual NPDES permit or alternative NPDES general permit where that permit established site-specific numeric water quality-based effluent limitations developed for the industrial stormwater component of the discharge; or

c. Discharges from facilities where any NPDES permit has been or is in the process of being denied, terminated, or revoked by EPA (this does not apply to the routine expiration and reissuance of NPDES permits every five years).

1.1.3.4 Stormwater Discharges Subject to Effluent Limitations Guidelines. Stormwater discharges subject to stormwater effluent limitation guidelines under 40 CFR, Subchapter N, other than those listed in Table 1-1 of this permit.

[1] This condition also applies in the limited circumstances where your facility is located in a jurisdiction where EPA is not the permitting authority, but your discharge point location is to a water of the United States where EPA is the permitting authority.

1.1.4 **Eligibility Related to Endangered Species Act (ESA) Listed Species and Critical Habitat Protection.** You are able to demonstrate that your stormwater discharges, authorized non-stormwater discharges, and stormwater discharge-related activities are not likely to adversely affect any species that are federally listed as endangered or threatened ("ESA-listed") and are not likely to adversely affect habitat that is designated as "critical habitat" under the Endangered Species Act (ESA), or said discharges and activities were the subject of an ESA Section 7 consultation or an ESA Section 10 permit. You must follow the procedures outlined in the Endangered Species Protection section of the NOI in EPA's NPDES eReporting Tool (NeT-MSGP) and meet one of the criteria listed in Appendix E. You must comply with any measures that formed the basis of your criteria eligibility determination to be in compliance with the MSGP. These measures become permit requirements per Part 2.3. Documentation of these measures must be kept as part of your Stormwater Pollution Prevention Plan (SWPPP) (see Part 6.2.6.1).

1.1.5 **Eligibility related to National Historic Preservation Act (NHPA)-Protected Properties.** You must follow the procedures outlined in the Historic Properties section of the NOI in NeT-MSGP to demonstrate that your stormwater discharges, authorized non-stormwater discharges, and stormwater discharge-related activities meet one of the eligibility criteria in Appendix F.

1.1.6 **Eligibility for "New Dischargers" and "New Sources" (as defined in Appendix A)[2] ONLY**

1.1.6.1 **Eligibility for "New Dischargers" and "New Sources" Based on Water Quality Standards.** Your stormwater discharge must be controlled as necessary such that the receiving water of the United States will meet applicable water quality standards. You are ineligible for coverage under this permit if EPA determines prior to your authorization to discharge that your stormwater discharges will not be controlled as necessary such that the receiving water of the United States will not meet an applicable water quality standard. In such case, EPA may notify you that an individual permit application is necessary per Part 1.3.8, or, alternatively, EPA may authorize your coverage under this permit after you implement additional control measures so that your stormwater discharges will be controlled as necessary such that the receiving water of the United States will meet applicable water quality standards.

1.1.6.2 **Eligibility for "New Dischargers" and "New Sources" for Water-Quality Impaired Waters.** If you discharge to an "impaired water" (as defined in Appendix A), you must do one of the following:

- **a.** Prevent all exposure to stormwater of the pollutant(s) for which the waterbody is impaired, and retain documentation of procedures taken to prevent exposure onsite with your SWPPP;
- **b.** When submitting your NOI in NeT-MSGP, provide the technical information or other documentation to support your claim that the pollutant(s) for which the waterbody

[2] "New Discharger" means a facility from which there is or may be a discharge, that did not commence the discharge of pollutants at a particular site prior to August 13, 1979, which is not a new source, and which has never received a finally effective NPDES permit for discharges at that site. See 40 CFR 122.2.

"New Source" means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced: i) after promulgation of standards of performance under section 306 of the CWA which are applicable to such source, or ii) after proposal of standards of performance in accordance with section 306 of the CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal. See 40 CFR 122.2.

is impaired is not present at your facility, and retain such documentation with your SWPPP; or

c. When submitting your NOI in NeT-MSGP, provide either data or other technical documentation, to support a conclusion that the stormwater discharge will be controlled as necessary such that the receiving water of the United States will meet applicable water quality standards and retain such information with your SWPPP. The information you submit must demonstrate:

i. For discharges to waters without an EPA-approved or established total maximum daily load (TMDL), that the discharge of the pollutant for which the water is impaired will be controlled as necessary such that the receiving water of the United States will meet applicable water quality standards at the point of discharge to the waterbody; or

ii. For discharges to waters with an applicable EPA-approved or established TMDL, that there are, in accordance with 40 CFR 122.4(i), sufficient remaining wasteload allocations in the TMDL to allow your discharge and that existing dischargers to the waterbody are subject to compliance schedules designed to bring the waterbody into attainment with water quality standards (e.g., a reserve allocation for future growth).

You are eligible under Part 1.1.6.2.c if you receive a determination from the applicable EPA Regional Office that your stormwater discharge will be controlled as necessary such that the receiving water of the United States will meet applicable water quality standards and you document the Region's determination in your SWPPP. If the applicable EPA Regional Office fails to respond to you within 30 days after submission of data, you are considered eligible for coverage.

1.1.6.3 Eligibility for "New Dischargers" and "New Sources" for Waters with High Water Quality (Tier 2, 2.5, and 3).

a. For new dischargers and new sources to Tier 2 or Tier 2.5 waters, your discharge must not lower the water quality of the applicable water. See a list of Tier 2 and Tier 2.5 waters in Appendix L.

b. For new dischargers and new sources to waters designed by a state or tribe as Tier 3 waters[3] (i.e., outstanding national resource waters) for antidegradation purposes under 40 CFR 131.13(a)(3), you are not eligible under this permit and you must apply for an individual permit. See a list of Tier 3 waters in Appendix L.

1.1.7 Eligibility for Discharges to a Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Site. If you discharge to a federal CERCLA Site listed in Appendix P, you must notify the EPA Region 10 Office when submitting your NOI, and the EPA Region 10 Office must determine that you are eligible for permit coverage. In determining eligibility for coverage under this Part, the EPA Region 10 Office may evaluate whether you are implementing or plan to implement adequate controls and/or procedures to ensure that your discharge will not lead to

[3] For the purposes of this permit, your project is considered to discharge to a Tier 2, Tier 2.5, or Tier 3 water if the first water of the United States to which you discharge is identified by a state, tribe, or EPA as a Tier 2, Tier 2.5, or Tier 3 water. For discharges that enter a separate storm sewer system prior to discharge, the first water of the United States to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system (separate storm sewer systems (MS4s and non-municipal storm sewers systems) do not include combined sewer systems or separate sanitary sewer systems).

recontamination of aquatic media at the CERCLA Site (i.e., your stormwater discharge will be controlled as necessary such that the receiving water of the United States will meet an applicable water quality standard). If it is determined that your facility discharges to a CERCLA Site listed in Appendix P after you have obtained coverage under this permit, you must contact the EPA Region 10 Office and ensure that you either have implemented or will implement adequate controls and/or procedures to ensure that your discharges will not lead to recontamination of aquatic media at the CERCLA Site such that your stormwater discharge will be controlled as necessary such that the receiving water of the United States will meet an applicable water quality standard.

For the purposes of this permit, a facility discharges to a federal CERCLA Site if the discharge flows directly into the site through its own conveyance, or through a conveyance owned by others, such as a municipal separate storm sewer system (MS4).

1.2 Types of Discharges Authorized Under the MSGP[4]

1.2.1 Authorized Stormwater Discharges. If you meet all the eligibility criteria in Part 1.1, then the following discharges from your facility are authorized under this permit:

1.2.1.1 Stormwater discharges associated with industrial activity for any primary industrial activities and co-located industrial activities (as defined in Appendix A) except for any stormwater discharges prohibited in Part 8;

1.2.1.2 Discharges EPA has designated as needing a stormwater permit as provided in Sector AD;

1.2.1.3 Discharges that are not otherwise required to obtain NPDES permit authorization but are mixed with discharges that are authorized under this permit; and

1.2.1.4 Stormwater discharges from facilities subject to any of the national stormwater-specific effluent limitations guidelines listed in Table 1-1.

Table 1-1. Stormwater-Specific Effluent Limitations Guidelines

Regulated Discharge	40 CFR Section	MSGP Sector	New Source Performance Standard (NSPS)	New Source Date
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Part 429, Subpart I	A	Yes	1/26/81
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	Part 418, Subpart A	C	Yes	4/8/74
Runoff from asphalt emulsion facilities	Part 443, Subpart A	D	Yes	7/28/75
Runoff from material storage piles at cement manufacturing facilities	Part 411, Subpart C	E	Yes	2/20/74

[4] Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under Clean Water Act (CWA) section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), or during an inspection.

Regulated Discharge	40 CFR Section	MSGP Sector	New Source Performance Standard (NSPS)	New Source Date
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 436, Subparts B, C, and D	J	No	N/A
Runoff from hazardous waste and non-hazardous waste landfills	Part 445, Subparts A and B	K, L	Yes	2/2/00
Runoff from coal storage piles at steam electric generating facilities	Part 423	O	Yes	11/19/82 (10/8/74)[1]
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	Part 449	S	Yes	6/15/1

[1] NSPS promulgated in 1974 were not removed via the 1982 regulation; therefore, wastewaters generated by 40 CFR Part 423-applicable sources that were New Sources under the 1974 regulations are subject to the 1974 NSPS.

1.2.2 **Authorized Non-Stormwater Discharges.** Below is the list of non-stormwater discharges authorized under this permit. Unless specifically listed in this Part, this permit does not authorize any other non-stormwater discharges requiring NPDES permit coverage and you must either eliminate those discharges or they must be covered under another NPDES permit; this includes the sector-specific non-stormwater discharges that are listed in Part 8 as prohibited (a non-exclusive list is provided only to raise awareness of contaminants or sources of contaminants generally characteristic of certain sectors).

1.2.2.1 **Authorized Non-Stormwater Discharges for All Sectors.** The following are the only non-stormwater discharges authorized under this permit for all sectors provided that all discharges comply with the effluent limits set forth in Parts 2 and 8.

a. Discharges from emergency/unplanned fire-fighting activities;

b. Fire hydrant flushings;

c. Potable water, including uncontaminated water line flushings;

d. Uncontaminated condensate from air conditioners, coolers/chillers, and other compressors and from the outside storage of refrigerated gases or liquids;

e. Irrigation/landscape drainage, provided all pesticides, herbicides, and fertilizers have been applied in accordance with the approved labeling;

f. Pavement wash waters, provided that detergents or hazardous cleaning products are not used (e.g., bleach, hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols), and the wash waters do not come into contact with oil and grease deposits, sources of pollutants associated with industrial activities (see Part 6.2.3), or any other toxic or hazardous materials, unless residues are first cleaned up using dry clean-up methods (e.g., applying absorbent materials and sweeping, using hydrophobic mops/rags) and you have implemented appropriate control measures to minimize discharges of mobilized solids and other pollutants (e.g., filtration, detention, settlement);

g. External building/structure washdown / power wash water that does not use detergents or hazardous cleaning products (e.g., those containing bleach,

hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols) and you have implemented appropriate control measures to minimize discharges of mobilized solids and other pollutants (e.g., filtration, detention, settlement);

h. Uncontaminated ground water or spring water;

i. Foundation or footing drains where flows are not contaminated with process materials;

j. Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of your facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown; drains); and

k. Any authorized non-stormwater discharge listed above in this Part 1.2.2 or any stormwater discharge listed in Part 1.2.1 mixed with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

1.2.2.2 Additional Authorized Non-Stormwater Discharge for Sector A Facilities. Discharges from the spray down of lumber and wood product storage yards where no chemical additives are used in the spray-down waters and no chemicals are applied to the wood during storage, provided the non-stormwater component of the discharge is in compliance with the non-numeric effluent limits requirements in Part 2.1.2.

1.2.2.3 Additional Authorized Non-Stormwater Discharges for Earth-Disturbing Activities Conducted Prior to Active Mining Activities for Sectors G, H and J Facilities. The following non-stormwater discharges are only authorized for earth-disturbing activities conducted prior to active mining activities, as defined in Part 8.G.3.2, 8.H.3.2, and 8.J.3.2, provided that, with the exception of water used to control dust, these discharges are not routed to areas of exposed soil and all discharges comply with the permit's effluent limits. Once the earth-disturbing activities conducted prior to active mining activities have ceased, the only authorized non-stormwater discharges for Sectors G, H, and J are those listed here in Part 1.2.2.3:

a. Water used to wash vehicles and equipment, provided that there is no discharge of soaps, solvents, or detergents used for such purposes;

b. Water used to control dust; and

c. Dewatering water that has been treated by an appropriate control under Parts 8.G.4.2.9, 8.H.4.2.9, or 8.J.4.2.9.

1.3 Obtaining Authorization to Discharge

1.3.1 Prepare Your Stormwater Pollution Prevention Plan (SWPPP) Prior to Submitting Your Notice of Intent (NOI). You must develop a SWPPP or update your existing SWPPP per Part 6 prior to submitting your NOI for coverage under this permit, per Part 1.3.2 below. You must make your SWPPP publicly available by either attaching it to your NOI, including a URL in your NOI, or providing additional information from your SWPPP on your NOI, per Part 6.4.

1.3.2 How to Submit Your NOI to Get Permit Coverage. To be covered under this permit, you must use EPA's NPDES eReporting Tool for the MSGP (NeT-MSGP) to electronically prepare and submit to EPA a complete and accurate NOI by the deadline applicable to your facility presented in Table 1-2. The NOI certifies to EPA that you are eligible for coverage according to Part 1.1 and provides information on your industrial activities

and related discharges. Per Part 7.1, you must submit your NOI electronically via NeT-MSGP, unless the applicable EPA Regional Office grants you a waiver from electronic reporting, in which case you may use the paper NOI form in Appendix G. To access NeT-MSGP, go to https://www.epa.gov/npdes/stormwater-discharges-industrial-activities#accessingmsgp

1.3.3 Deadlines for Submitting Your NOI and Your Official Date of Permit Coverage. Table 1-2 provides the deadlines for submitting your NOI and your official start date of permit coverage.

Table 1-2. NOI Submittal Deadlines and Discharge Authorization Dates

Category of Facility/Operator	NOI Submission Deadline	Discharge Authorization Date[1, 2]
Existing MSGP facility. Operators of industrial activities whose stormwater discharges were covered under the 2015 MSGP.	No later than May 30, 2021.	30 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization has been denied or delayed. Note: You must review and update your SWPPP to ensure that this permit's requirements are addressed prior to submitting your NOI. Provided you submit your NOI in accordance with the deadline, your authorization under the 2015 MSGP is automatically continued until you have been granted coverage under this permit or an alternative permit, or coverage is otherwise terminated.
Operator operating consistent with EPA's No Action Assurance and submitted an Intent to Operate (ITO) form. Operators of industrial activities who commenced discharging between June 4, 2020 and March 1, 2021 and have been operating consistent with EPA's June 3, 2020 'No Action Assurance for the NPDES Stormwater Multi-Sector General Permit for Industrial Activities.'	As soon as possible, but see the June 3, 2020 'No Action Assurance for the NPDES Stormwater Multi-Sector General Permit for Industrial Activities' (and any updates to that document) for additional guidance on deadlines.	30 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization has been denied or delayed.
New facility without MSGP coverage. Operators of industrial activities that will commence discharging after March 1, 2021.	At least 30 calendar days prior to commencing discharge.	30 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization has been denied or delayed.
Existing facility covered under an alternative permit. Operators seeking coverage for stormwater discharges previously covered under an individual permit or an alternative general permit.	At least 30 calendar days prior to commencing discharge.	

Category of Facility/Operator	NOI Submission Deadline	Discharge Authorization Date[1, 2]
Existing MSGP facility with a new operator. New operators of existing industrial activities with stormwater discharges previously authorized under the 2021 MSGP.	At least 30 calendar days prior to the date of transfer of control to the new operator.	
Existing facility without MSGP coverage. Operators of industrial activities that commenced discharging prior to March 1, 2021, but whose stormwater discharges were not covered under the 2015 MSGP or another NPDES permit and have not been operating consistent with EPA's No Action Assurance for EPA's NPDES MSGP.	Immediately; your stormwater discharges are currently unpermitted.[1]	

[1] If you have missed the deadline to submit your NOI, any and all discharges from your industrial activities will continue to be unauthorized under the CWA until they are covered by this or a different NPDES permit. EPA may take enforcement action for any unpermitted discharges that occur between the commencement of discharging and discharge authorization.

[2] Discharges are not authorized if your NOI is incomplete or inaccurate or if you are ineligible for permit coverage.

1.3.4 **Modifying your NOI.** If after submitting your NOI, you need to correct or update any fields, you may do so by submitting a "Change NOI" form using NeT-MSGP. Per Part 7.1, you must submit your Change NOI electronically via NeT-MSGP, unless the EPA Regional Office grants you a waiver from electronic reporting, in which case you may use the suggested format for the paper Change NOI form.

1.3.4.1 For an existing operator, if any of the information supplied on the NOI changes, you must submit a Change NOI form within thirty (30) calendar days after the change occurs.

1.3.4.2 At a facility where there is a transfer in operator or a new operator takes over operational control at an existing facility, the new operator must submit a new NOI no later than thirty (30) calendar days after a change in operators. The previous operator must submit a Notice of Termination (NOT) no later than thirty (30) calendar days after MSGP coverage becomes active for the new operator, as specified in Part 1.4.

1.3.5 **Requirement to Post a Sign of your Permit Coverage.** You must post a sign or other notice of your permit coverage at a safe, publicly accessible location in close proximity to your facility. Public signage is not required where other laws or local ordinances prohibit such signage, in which case you must document in your SWPPP a brief explanation for why you cannot post a sign and a reference to the law or ordinance. You must use a font large enough to be readily viewed from a public right-of-way and perform periodic maintenance of the sign to ensure that it remains legible, visible, and factually correct. At minimum, the sign must include:

1.3.5.1 The following statement: "[*Name of facility*] is permitted for industrial stormwater discharges under the U.S. EPA's Multi-Sector General Permit (MSGP)";

1.3.5.2 Your NPDES ID number;

1.3.5.3 A contact phone number for obtaining additional facility information;

1.3.5.4 **One** of the following:

a. The Uniform Resource Locator (URL) for the SWPPP (if available), and the following statement: "To report observed indicators of stormwater pollution, contact [*optional: include facility point of contact and*] EPA at: [*include the applicable MSGP Regional Office contact information found at https://www.epa.gov/npdes/contact-us-stormwater#regional*]; **or**

b. The following statement: "To obtain the Stormwater Pollution Prevention Plan (SWPPP) for this facility or to report observed indicators of stormwater pollution, contact [*optional: include facility point of contact and*] EPA at [*include the applicable MSGP Regional Office contact information found at https://www.epa.gov/npdes/contact-us-stormwater#regional*]."

1.3.6 **Your Official End Date of Permit Coverage.** Once covered under this permit, your coverage will last until the date that:

1.3.6.1 You terminate permit coverage by submitting a Notice of Termination (NOT) per Part 1.4; or

1.3.6.2 You receive coverage under a different NPDES permit or a reissued or replacement version of this permit after it expires on February 28, 2026; or

1.3.6.3 You fail to submit an NOI for coverage under a reissued or replacement version of this permit before the required deadline.

1.3.7 **Continuation of Coverage for Existing Operators After the Permit Expires**

1.3.7.1 Note that if the 2021 MSGP is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with section 558(c) of the Administrative Procedure Act (see 40 CFR 122.6) and remain in force and effect for operators that were covered prior to its expiration. All operators authorized to discharge prior to the expiration date of the 2021 MSGP will automatically remain covered under the 2021 MSGP until the earliest of:

a. The date the operator is authorized for coverage under a new version of the MSGP following the timely submittal of a complete and accurate NOI. Note that if a timely NOI for coverage under the reissued or replacement permit is not submitted, coverage will terminate on the date that the NOI was due; or

b. The date of the submittal of a Notice of Termination; or

c. Issuance of an individual permit for the facility's discharge(s); or

d. A final permit decision by EPA not to reissue the MSGP, at which time EPA will identify a reasonable time period for covered operators to seek coverage under an alternative general permit or an individual permit. Coverage under the 2021 MSGP will terminate at the end of this time period.

1.3.7.2 EPA reserves the right to modify or revoke and reissue the 2021 MSGP under 40 CFR 122.62 and 63, in which case operators will be notified of any relevant changes or procedures to which they may be subject. If EPA fails to issue another general permit prior to the expiration of a previous one, EPA does not have the authority to provide coverage to industrial operators not already covered under that prior general permit. If the five-year expiration date for the 2021 MSGP has passed and a new MSGP has not

been reissued, new operators seeking discharge authorization should contact EPA regarding the options available, such as applying for individual permit coverage.

1.3.8 **Coverage Under Alternative Permits.** EPA may require you to apply for and/or obtain authorization to discharge under an alternative permit, i.e., either an individual NPDES permit or an alternative NPDES general permit, in accordance with 40 CFR 122.64 and 124.5. If EPA requires you to apply for an alternative permit, the Agency will notify you in writing that a permit application or NOI is required. This notification will include a brief statement of the reasons for this decision and will contain alternative permit application or NOI requirements, including deadlines for completing your application or NOI.

1.3.8.1 **Denial of Coverage for New or Previously Unpermitted Facilities.** For new or previously unpermitted facilities, following the submittal of your NOI, you may be denied coverage under this permit and must apply for and/or obtain authorization to discharge under an alternative permit.

1.3.8.2 **Loss of Authorization Under the 2021 MSGP for Existing Permitted Facilities.** If your stormwater discharges are covered under this permit, you may receive a written notification that you must either apply for coverage under an individual NPDES permit or submit an NOI for coverage under an alternative general NPDES permit. In addition to the reasons for the decision and alternative permit application or NOI deadlines, the notice will include a statement that on the effective date of your alternative permit coverage, your coverage under the 2021 MSGP will terminate. EPA will terminate your MSGP permit coverage in NeT-MSGP at that time. EPA may grant additional time to submit the application or NOI if you request it. If you fail to submit an alternative permit application or NOI as required by EPA, then your authorization to discharge under the 2021 MSGP is terminated at the end of the day EPA required you to submit your alternative permit application or NOI. EPA may take appropriate enforcement action for any unpermitted discharge.

1.3.8.3 **Operators Requesting Coverage Under an Alternative Permit.** You may request to be covered under an individual permit. In such a case, you must submit an individual permit application in accordance with the requirements of 40 CFR 122.28(b)(3)(iii), with reasons supporting the request, to the applicable EPA Regional Office listed in Part 7.8 of this permit. The request may be granted by issuance of an individual permit if your reasons are adequate to support the request. When you are authorized to discharge under an alternative permit, your authorization to discharge under the 2021 MSGP is terminated on the effective date of the alternative permit.

1.4 Terminating Permit Coverage

1.4.1 **How to Submit your Notice of Termination (NOT) to Terminate Permit Coverage.** To terminate permit coverage, you must use EPA's NPDES eReporting Tool for the MSGP (NeT-MSGP) to electronically prepare and submit to EPA a complete and accurate NOT. Per Part 7.1, you must submit your NOT electronically via NeT-MSGP, unless the EPA Regional Office grants you a waiver from electronic reporting, in which case you may use the paper NOT form in Appendix H. To access NeT-MSGP, go to https://www.epa.gov/npdes/stormwater-discharges-industrial-activities#accessingmsgp

Your authorization to discharge under this permit terminates at midnight of the day that you are notified that your complete NOT has been processed. If you submit a NOT without meeting one or more of the conditions in Part 1.4.2 then your NOT is not valid.

Until you terminate permit coverage, you must comply with all conditions and effluent limitations in the permit.

1.4.2 **When to Submit Your Notice of Termination.** You must submit a NOT within 30 days after one or more of the following conditions have been met:

1.4.2.1 A new owner or operator has received authorization to discharge under this permit; or

1.4.2.2 You have ceased operations at the facility and/or there are not or no longer will be discharges of stormwater associated with industrial activity from the facility, and you have already implemented necessary sediment and erosion controls per Part 2.1.2.5; or

1.4.2.3 You are a Sector G, H, or J facility and you have met the applicable termination requirements; or

1.4.2.4 You obtained coverage under an individual or alternative general permit for all discharges required to be covered by an NPDES permit, unless EPA terminates your coverage for you per Part 1.3.8.

1.5 Conditional Exclusion for No Exposure

If you are covered by this permit and become eligible for a "no exposure" exclusion from permitting under 40 CFR 122.26(g), you may file a No Exposure Certification (NEC). You are no longer required to have a permit upon submission of a complete and accurate NEC to EPA. If you are no longer required to have permit coverage because of a no exposure exclusion and have submitted a NEC form to EPA, you are not required to submit a NOT. You must submit a NEC form to EPA once every five years.

You must use EPA's NPDES eReporting Tool for the MSGP (NeT-MSGP) to electronically prepare and submit to EPA a complete and accurate NEC. Per Part 7.1, you must submit your NEC electronically via NeT-MSGP, unless the applicable EPA Regional Office grants you a waiver from electronic reporting, in which case you may use the paper NEC form in Appendix K. To access NeT-MSGP, go to https://cdxnodengn.epa.gov/net-msgp/action/login

1.6 Permit Compliance

Any noncompliance with any of the requirements of this permit constitutes a violation of this permit, and thus is a violation of the CWA. As detailed in Part 5, failure to take any required corrective actions constitutes an independent, additional violation of this permit, in addition to any original violation that triggered the need for a corrective action. As such, any actions and time periods specified for remedying noncompliance do not absolve you of the initial underlying noncompliance.

Where an Additional Implementation Measure (AIM) is triggered by an event that does not itself constitute permit noncompliance (i.e., an exceedance of an applicable benchmark), there is no permit violation provided you comply with the required responses within the relevant deadlines established in Part 5.

1.7 Severability

Invalidation of a portion of this permit does not necessarily render the whole permit invalid. EPA's intent is that the permit is to remain in effect to the extent possible; in the

event that any part of this permit is invalidated, EPA will advise the regulated community as to the effect of such invalidation.

2. Control Measures and Effluent Limits

In the technology-based limits included in Parts 2.1 and 8, the term "minimize" means to reduce and/or eliminate to the extent achievable using stormwater control measures (SCMs) (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practice. The term "infeasible" means not technologically possible or not economically practicable and achievable in light of best industry practices. EPA notes that it does not intend for any permit requirement to conflict with state water rights law.

2.1 Stormwater Control Measures

You must select, design, install, and implement stormwater control measures (including best management practices) to minimize pollutant discharges that address the selection and design considerations in Part 2.1.1, meet the non-numeric effluent limits in Part 2.1.2, meet limits contained in applicable effluent limitations guidelines in Part 2.1.3, and meet the water quality-based effluent limitations in Part 2.2.

The selection, design, installation, and implementation of control measures to comply with Part 2 must be in accordance with good engineering practices and manufacturer's specifications. Note that you may deviate from such manufacturer's specifications where you provide justification for such deviation and include documentation of your rationale in the part of your SWPPP that describes your control measures, consistent with Part 6.2.4. You must modify your stormwater control measures per Part 5.1 if you find that your control measures are not achieving their intended effect of minimizing pollutant discharges (i.e., your discharges will be controlled as necessary such that the receiving water of the United States will meet applicable water quality standards or meet any of the other non-numeric effluent limits in this permit). Regulated stormwater discharges from your facility include stormwater run-on that commingles with stormwater discharges associated with industrial activity at your facility.

2.1.1 **Stormwater Control Measure Selection and Design Considerations**. You must consider the following when selecting and designing control measures:

2.1.1.1 Preventing stormwater from coming into contact with polluting materials is generally more effective, and less costly, than trying to remove pollutants from stormwater;

2.1.1.2 Using stormwater control measures in combination may be more effective than using control measures in isolation for minimizing pollutants in your stormwater discharge;

2.1.1.3 Assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective stormwater control measures that will achieve the limits in this permit;

2.1.1.4 Minimizing impervious areas at your facility and infiltrating stormwater onsite (including bioretention cells, green roofs, and pervious pavement, among other approaches) can reduce the frequency and volume of discharges and improve ground water recharge and stream base flows in local streams, although care must be taken to avoid ground water contamination;

2.1.1.5 Attenuating flow using open vegetated swales and natural depressions can reduce in-stream impacts of erosive flows;

2.1.1.6 Conserving and/or restoring riparian buffers will help protect streams from stormwater discharges and improve water quality;

2.1.1.7 Using treatment interceptors (e.g., swirl separators and sand filters) may be appropriate in some instances to minimize the discharge of pollutants; and

2.1.1.8 Implementing structural improvements, enhanced/resilient pollution prevention measures, and other mitigation measures can help to minimize impacts from stormwater discharges from major storm events such as hurricanes, storm surge, extreme/heavy precipitation,[5] and flood events. If such stormwater control measures are already in place due to existing requirements mandated by other state, local or federal agencies, you should document in your SWPPP a brief description of the controls and a reference to the existing requirement(s). If your facility may be exposed to or has previously experienced such major storm events,[6] additional stormwater control measures that may be considered include, but are not limited to:

a. Reinforce materials storage structures to withstand flooding and additional exertion of force;

b. Prevent floating of semi-stationary structures by elevating to the Base Flood Elevation (BFE)[7] level or securing with non-corrosive device;

c. When a delivery of exposed materials is expected, and a storm is anticipated within 48 hours, delay delivery until after the storm or store materials as appropriate (refer to emergency procedures);

d. Temporarily store materials and waste above the BFE level;

e. Temporarily reduce or eliminate outdoor storage;

f. Temporarily relocate any mobile vehicles and equipment to higher ground;

g. Develop scenario-based emergency procedures for major storms that are complementary to regular stormwater pollution prevention planning and identify emergency contacts for staff and contractors; and

[5] Heavy precipitation refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season. Heavy precipitation does not necessarily mean the total amount of precipitation at a location has increased—just that precipitation is occurring in more intense or more frequent events.

[6] To determine if your facility is susceptible to an increased frequency of major storm events that could impact the discharge of pollutants in stormwater, you may reference FEMA, NOAA, or USGS flood map products at https://www.usgs.gov/faqs/where-can-i-find-flood-maps?qt-news_science_products=0#qt-news_science_products.

[7] Base Flood Elevation (BFE) is the elevation of surface water resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year. The BFE is shown on the Flood Insurance Rate Map (FIRM) for zones AE, AH, A1–A30, AR, AR/A, AR/AE, AR/A1– A30, AR/AH, AR/AO, V1–V30 and VE. (Source: https://www.fema.gov/node/404233). The FEMA Flood Map Service Center can be accessed through https://msc.fema.gov/portal/search.

h. Conduct staff training for implementing your emergency procedures at regular intervals.

Note: Part 2.1.1 requires that you must consider Parts 2.1.1.1 through 2.1.1.8 when selecting and designing control measures to minimize pollutant discharges via stormwater. Part 2.1.1 does not require nor prescribe specific control measure to be implemented; however, you must document in your SWPPP per Part 6.2.4 the considerations made to select and design control measures at your facility to minimize pollutants discharged via stormwater.

2.1.2 **Non-Numeric Technology-Based Effluent Limits (BPT/BAT/BCT).**[8] You must comply with the following non-numeric effluent limits as well as any sector-specific non-numeric effluent limits in Part 8, except where otherwise specified.

Effluent limit requirements in Part 2.1.2 that do not involve the site-specific selection of a control measure or are specific activity requirements (e.g., "Cleaning catch basins when the depth of debris reaches two-thirds (2/3) of the sump depth, in line with manufacturer specifications, whichever is lower, and keeping the debris surface at least six inches below the lowest outlet pipe") are marked with an asterisk (*). When documenting in your SWPPP, per Part 6, how you will comply with the requirements marked with an asterisk, you have the option of including additional information or you may just "copy-and-paste" those effluent limits word-for-word from the permit into your SWPPP without providing additional documentation (see Part 6.2.4).

2.1.2.1 **Minimize Exposure.** You must minimize the exposure of manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and stormwater in order to minimize pollutant discharges by either locating these industrial materials and activities inside or protecting them with storm resistant coverings. Unless infeasible, you must also:

a. Use grading, berming or curbing to prevent discharges of contaminated flows and divert run-on away from these areas;

b. Locate materials, equipment, and activities so that potential leaks and spills are contained or able to be contained or diverted before discharge;

c. Store leaky vehicles and equipment indoors;

d. Perform all vehicle and/or equipment cleaning operations indoors, under cover, or in bermed areas that prevent discharges and run-on and also that capture any overspray; and

e. Drain fluids from equipment and vehicles that will be decommissioned, and, for any equipment and vehicles that will remain unused for extended periods of time, inspect at least monthly for leaks.

[8] BPT is Best Practicable Control Technology Currently Available, as set forth in CWA section 304(b)(1) and Appendix A; BAT is Best Available Technology Economically Achievable, as set forth in CWA section 304(b)(2) and Appendix A; and BCT is Best Conventional Pollutant Control Technology, as set forth in CWA section 304(b)(4) and Appendix A.

Note: Industrial materials do not need to be enclosed or covered if stormwater from affected areas does not discharge pollutants to waters of the United States or if discharges are authorized under another NPDES permit.

2.1.2.2 **Good Housekeeping.** You must keep clean all exposed areas that are potential sources of pollutants. You must perform good housekeeping measures in order to minimize pollutant discharges, including but not limited to, the following:

a. Sweep or vacuum at regular intervals or, alternatively, wash down the area and collect and/or treat, and properly dispose of the washdown water;

b. Store materials in appropriate containers;

c. Keep all dumpster lids closed when not in use. For dumpsters and roll off boxes that do not have lids and could leak, ensure that discharges have a control (e.g., secondary containment, treatment). Consistent with Part 1.2.2 above, this permit does not authorize dry weather discharges from dumpsters or roll off boxes;*

d. Minimize the potential for waste, garbage and floatable debris to be discharged by keeping exposed areas free of such materials, or by intercepting them before they are discharged.

e. Plastic Materials Requirements: Facilities that handle pre-production plastic must implement control measures to eliminate discharges of plastic in stormwater.[9] Examples of plastic material required to be addressed as stormwater pollutants include plastic resin pellets, powders, flakes, additives, regrind, scrap, waste and recycling.

2.1.2.3 **Maintenance.**

a. **Maintenance Activities.** You must maintain all control measures that are used to achieve the effluent limits in this permit in effective operating condition, as well as all industrial equipment and systems, in order to minimize pollutant discharges. This includes:

ii. Performing inspections and preventive maintenance of stormwater drainage, source controls, treatment systems, and plant equipment and systems that could fail and result in discharges of pollutants via stormwater.

iii. Maintaining non-structural control measures (e.g., keep spill response supplies available, personnel appropriately trained).

iv. Inspecting and maintaining baghouses at least quarterly to prevent the escape of dust from the system and immediately removing any accumulated dust at the base of the exterior baghouse.*

[9] Examples of appropriate control measures include but are not limited to: installing a containment system, or other control, at each on-site storm drain discharge point down gradient of areas containing plastic material, designed to trap all particles retained by a 1 mm mesh screen; using a durable sealed container designed not to rupture under typical loading and unloading activities at all points of plastic transfer and storage; using capture devices as a form of secondary containment during transfers, loading, or unloading plastic materials, such as catch pans, tarps, berms or any other device that collects errant material; having a vacuum or vacuum-type system for quick cleanup of fugitive plastic material available for employees; for facilities that maintain outdoor storage of plastic materials, do so in a durable, permanent structure that prevents exposure to precipitation that could cause the material to be discharged via stormwater.

v. Cleaning catch basins when the depth of debris reaches two-thirds (2/3) of the sump depth, or in line with manufacturer specifications, whichever is lower, and keeping the debris surface at least six inches below the lowest outlet pipe.*

b. **Maintenance Deadlines**.

ii. If you find that your control measures need routine maintenance, you must conduct the necessary maintenance immediately in order to minimize pollutant discharges.

iii. If you find that your control measures need to be repaired or replaced, you must immediately take all reasonable steps to prevent or minimize the discharge of pollutants until the final repair or replacement is implemented, including cleaning up any contaminated surfaces so that the material will not be discharged during subsequent storm events. Final repairs/replacement of stormwater controls should be completed as soon as feasible but must be no later than the timeframe established in Part 5.1.3 for corrective actions, i.e., within 14 days or, if that is infeasible, within 45 days. If the completion of stormwater control repairs/replacement will exceed the 45 day timeframe, you may take the minimum additional time necessary to complete the maintenance, provided that you notify the EPA Regional Office of your intention to exceed 45 days, and document in your SWPPP your rationale for your modified maintenance timeframe. If a control measure was never installed, was installed incorrectly or not in accordance with Parts 2 and/or 8, or is not being properly operated or maintained, you must conduct corrective action as specified in Part 5.1.

Note: In this context, the term "immediately" means the day you identify that a control measure needs to be maintained, repaired, or replaced, you must take all reasonable steps to minimize or prevent the discharge of pollutants until you can implement a permanent solution. However, if you identify a problem too late in the work day to initiate action, you must perform the action the following work day morning. "All reasonable steps" means you must respond to the conditions triggering the action, such as, cleaning up any exposed materials that may be discharged in a storm event (e.g., through sweeping, vacuuming) or making arrangements (i.e., scheduling) for a new SCM to be installed.

2.1.2.4 **Spill Prevention and Response.** You must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur in order to minimize pollutant discharges. You must conduct spill prevention and response measures, including but not limited to, the following:

a. Clean up spills and leaks promptly using dry methods (e.g., absorbents) to prevent the discharge of pollutants;

b. Use drip pans and absorbents if leaky vehicles and/or equipment are stored outdoors;

c. Use spill/overflow protection equipment;

d. Plainly label containers (e.g., "Used Oil," "Spent Solvents," "Fertilizers and Pesticides") that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;*

e. Implement procedures for material storage and handling, including the use of secondary containment and barriers between material storage and traffic areas, or a similarly effective means designed to prevent the discharge of pollutants from these areas;

f. Develop training on the procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. As appropriate, execute such procedures as soon as possible;

g. Keep spill kits onsite, located near areas where spills may occur or where a rapid response can be made; and

h. Notify appropriate facility personnel when a leak, spill, or other release occurs.

Where a leak, spill or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 or, in the Washington, DC, metropolitan area, call (202) 267-2675 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as you have knowledge of the discharge. State or local requirements may necessitate reporting spills or discharges to local emergency response, public health, or drinking water supply agencies. Contact information must be in locations that are readily accessible and available.

2.1.2.5 **Erosion and Sediment Controls.** To minimize pollutant discharges in stormwater, you must minimize erosion by stabilizing exposed soils at your facility and placing flow velocity dissipation devices at discharge locations to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points. You must also use structural and non-structural control measures to minimize the discharge of sediment. If you use polymers and/or other chemical treatments as part of your controls, you must identify the polymers and/or chemicals used and the purpose in your SWPPP. There are many resources available to help you select appropriate SCMs for erosion and sediment control, including EPA's Stormwater Discharges from Construction Activities website at: https://www.epa.gov/npdes/stormwater-discharges-construction-activities.

2.1.2.6 **Management of Stormwater.** You must divert, infiltrate, reuse, contain, or otherwise reduce stormwater to minimize pollutants in your discharges. In selecting, designing, installing, and implementing appropriate control measures, you are encouraged to consult with EPA's resources relating to stormwater management, including the sector-specific *Industrial Stormwater Fact Sheet Series*, (https://www.epa.gov/npdes/stormwater-discharges-industrial-activities#factsheets) and any similar state or tribal resources.

2.1.2.7 **Salt Storage Piles or Piles Containing Salt.** You must enclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces, in order to minimize pollutant discharges. You must implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile. Piles do not need to be enclosed or covered pursuant to this permit if stormwater from the piles is not discharged or if discharges from the piles are authorized under another NPDES permit.

2.1.2.8 Employee Training.

a. Types of Personnel Who Require Training. You must train all employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to comply with this permit (e.g., inspectors, maintenance personnel), including all members of your stormwater pollution prevention team. You must ensure the following personnel understand the requirements of this permit and their specific responsibilities with respect to those requirements:

i. Personnel who are responsible for the design, installation, maintenance, and/or repair of controls (including pollution prevention measures);

ii. Personnel responsible for the storage and handling of chemicals and materials that could become pollutants discharged via stormwater;

iii. Personnel who are responsible for conducting and documenting monitoring and inspections as required in Parts 3 and 4; and

iv. Personnel who are responsible for taking and documenting corrective actions as required in Part 5.

b. Areas of Required Training. Personnel must be trained in at least the following if related to the scope of their job duties (e.g., only personnel responsible for conducting inspections need to understand how to conduct inspections):

i. An overview of what is in the SWPPP;

ii. Spill response procedures, good housekeeping, maintenance requirements, and material management practices;

iii. The location of all the controls required by this permit, and how they are to be maintained;

iv. The proper procedures to follow with respect to the permit's pollution prevention requirements; and

v. When and how to conduct inspections, record applicable findings, and take corrective actions; and

vi. The facility's emergency procedures, if applicable per Part 2.1.1.8.

2.1.2.9 Non-Stormwater Discharges. You must evaluate for the presence of non-stormwater discharges. You must eliminate any non-stormwater discharges not explicitly authorized in Part 1.2.2 or covered by another NPDES permit, including vehicle and equipment/tank wash water (except for those authorized in Part 1.2.2.3 for Sectors G, H, and J). If not covered under a separate NPDES permit, wastewater, wash water and any other unauthorized non-stormwater must be discharged to a sanitary sewer in accordance with applicable industrial pretreatment requirements, or otherwise disposed of appropriately.

2.1.2.10 Dust Generation and Vehicle Tracking of Industrial Materials. You must minimize generation of dust and off-site tracking of raw, final, or waste materials in order to minimize pollutants discharged via stormwater.

2.1.3 **Numeric Effluent Limitations Based on Effluent Limitations Guidelines.** If you are in an industrial category subject to one of the effluent limitations guidelines identified in Table 4-3 (see Part 4.2.3.1), you must meet the effluent limits referenced in Table 2-1 below:

Table 2-1. Applicable Effluent Limitations Guidelines

Regulated Activity	40 CFR Part/Subpart	Effluent Limit
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Part 429, Subpart I	See Part 8.A.7
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	Part 418, Subpart A	See Part 8.C.4
Runoff from asphalt emulsion facilities	Part 443, Subpart A	See Part 8.D.4
Runoff from material storage piles at cement manufacturing facilities	Part 411, Subpart C	See Part 8.E.5
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 436, Subparts B, C, or D	See Part 8.J.9
Runoff from hazardous waste landfills	Part 445, Subpart A	See Part 8.K.6
Runoff from non-hazardous waste landfills	Part 445, Subpart B	See Part 8.L.10
Runoff from coal storage piles at steam electric generating facilities	Part 423	See Part 8.O.8
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	Part 449	See Part 8.S.8

2.2 Water Quality-Based Effluent Limitations

2.2.1 **Water Quality Standards.** Your discharge must be controlled as necessary to meet applicable water quality standards of all affected states.

EPA expects that compliance with the conditions in this permit will control discharges as necessary to meet applicable water quality standards. If at any time you become aware, or EPA determines, that your stormwater discharge will not be controlled as necessary such that the receiving water of the United States will not meet an applicable water quality standard, you must take corrective action(s) as required in Part 5.1 and document the corrective actions as required in Part 5.3. You must also comply with any additional requirements that your state or tribe requires in Part 9.

EPA may also require that you undertake additional control measures (to meet the narrative water quality-based effluent limit above) on a site-specific basis, or require you to obtain coverage under an individual permit, if information in your NOI, required reports, or from other sources indicates that your discharges are not controlled as necessary such that the receiving water of the United States will not meet applicable water quality standards. You must implement all measures necessary to be consistent with an available wasteload allocation in an EPA-established or approved TMDL.

2.2.2 **Discharges to Water Quality-Impaired Waters.** You are considered to discharge to an impaired water if the first water of the United States to which your discharge is

identified by a state, tribe or EPA as not meeting an applicable water quality standard, and:

- Requires development of a TMDL (pursuant to section 303(d) of the CWA);
- Is addressed by an EPA-approved or established TMDL; or
- Is not in either of the above categories but the waterbody is covered by a pollution control program that meets the requirements of 40 CFR 130.7(b)(1).

Note: For discharges that enter a separate storm sewer system[10] prior to discharge, the first water of the United States to which you discharge is the waterbody that receives the water from the storm sewer system.

2.2.2.1 **Existing Discharge to an Impaired Water with an EPA-Approved or Established TMDL.** If you discharge to an impaired water with an EPA-approved or established TMDL, EPA will inform you whether any additional measures are necessary for your discharge to be consistent with the assumptions and requirements of the applicable TMDL and its wasteload allocation, or if coverage under an individual permit is necessary per Part 1.3.8.

2.2.2.2 **Existing Discharger to an Impaired Water without an EPA-Approved or Established TMDL.** If you discharge to an impaired water without an EPA-approved or established TMDL, you are still required to comply with Part 2.2.1 and the monitoring requirements of Part 4.2.5.1. Note that the impaired waters monitoring requirements of Part 4.2.5.1 also apply where EPA determines that your discharge is not controlled as necessary such that the receiving water of the United States will not meet applicable water quality standards in an impaired downstream water segment, even if your discharge is initially to a receiving water(s) that is not identified as impaired according to Part 2.2.2.

2.2.2.3 **New Discharger or New Source to an Impaired Water.** If your authorization to discharge under this permit relied on Part 1.1.6.2 for a new discharger or a new source to an impaired water, you must implement and maintain any measures that enabled you to become eligible under Part 1.1.6.2, and modify such measures as necessary pursuant to any Part 5 corrective actions. You also must comply with Part 2.2.1 and the monitoring requirements of Parts 4.2.5.1.

2.2.3 **Tier 2 Antidegradation Requirements for New Dischargers, New Sources, or Increased Discharges.** If you are a new discharger or a new source (as defined in Appendix A), or an existing discharger required to notify EPA of an increased discharge consistent with Part 7.6 (i.e., a "planned changes" report), and you discharge directly to waters designated by a state or tribe as Tier 2 or Tier 2.5 for antidegradation purposes under 40 CFR 131.12(a), EPA may require that you undertake additional control measures as necessary to ensure compliance with the applicable antidegradation requirements, or notify you that an individual permit application is necessary in accordance with Part 1.3.8. See list of Tier 2 and 2.5 waters in Appendix L.

2.3 **Requirements Relating to Endangered Species, Historic Properties, and CERCLA Sites**

If your eligibility under either Part 1.1.4, Part 1.1.5, and/or Part 1.1.7 was made possible through your, or another operator's, agreement to undertake additional measures, you must comply with all such measures to maintain eligibility under the MSGP. Note that if

[10] Separate storm systems include both municipal storm sewer systems (MS4s) and non-municipal separate storm sewers. Separate storm systems do not include combined sewer systems or sanitary sewer systems.

at any time you become aware, or EPA determines, that your discharges and/or discharge-related activities have the potential to adversely affect listed species and/or critical habitat, have an effect on historic properties, or that your facility discharges to a CERCLA Site listed in Appendix P after you have obtained coverage under this permit, EPA may inform you of the need to implement additional measures on a site-specific basis to meet the effluent limits in this permit, or require you to obtain coverage under an individual permit.

3. Inspections

3.1 Routine Facility Inspections

3.1.1 **Inspection Personnel.** Qualified personnel (as defined in Appendix A) must perform the inspections. The qualified personnel may be a member of your stormwater pollution prevention team, or if the qualified personnel is a third-party you hire (i.e., a contractor), at least one member of your stormwater pollution prevention team must participate in the inspection. Inspectors must consider the results of visual and analytical monitoring (if any) for the past year when planning and conducting inspections.

3.1.2 **Areas that You Must Inspect.** During normal facility operating hours, the qualified personnel must conduct inspections of areas of the facility covered by the requirements in this permit, including, but not limited to, the following:

3.1.2.1 Areas where industrial materials or activities are exposed to stormwater;

3.1.2.2 Areas identified in the SWPPP and those that are potential pollutant sources (see Part 6.2.3);

3.1.2.3 Areas where spills and leaks have occurred in the past three years;

3.1.2.4 Discharge points; and

3.1.2.5 Control measures used to comply with the effluent limits contained in this permit.

3.1.3 **What You Must Look for During an Inspection.** During the inspection, the qualified personnel must examine or look out for, including, but not limited to, the following:

3.1.3.1 Industrial materials, residue or trash that may have or could come into contact with stormwater;

3.1.3.2 Leaks or spills from industrial equipment, drums, tanks and other containers;

3.1.3.3 Offsite tracking of industrial or waste materials, or sediment where vehicles enter or exit the site;

3.1.3.4 Tracking or blowing of raw, final or waste materials from areas of no exposure to exposed areas;

3.1.3.5 Erosion of soils at your facility, channel and streambank erosion and scour in the immediate vicinity of discharge points, per Part 2.1.2.5;

3.1.3.6 Non-authorized non-stormwater discharges, per Part 2.1.2.9;

3.1.3.7 Control measures needing replacement, maintenance or repair; and

3.1.3.8 During an inspection occurring during a stormwater event or stormwater discharge, you must observe control measures implemented to comply with effluent limits to ensure they are functioning correctly. You must also observe discharge points, as defined in Appendix A, during this inspection. If such discharge locations are inaccessible, you must inspect nearby downstream locations.

3.1.4 **Inspection Frequency.** The qualified personnel must conduct inspections at least quarterly (i.e., once each calendar quarter), or in some instances more frequently (e.g., monthly). Increased frequency may be appropriate for some types of equipment, processes and stormwater control measures, or areas of the facility with significant activities and materials exposed to stormwater. At least once each calendar year, the routine inspection must be conducted during a period when a stormwater discharge is occurring.

3.1.5 **Exceptions to Routine Facility Inspections for Inactive and Unstaffed Facilities.** The requirement to conduct facility inspections on a routine basis does not apply at a facility that is inactive and unstaffed, as long as there are no industrial materials or activities exposed to stormwater. Such a facility is only required to conduct an annual site inspection in accordance with Part 3.1. To invoke this exception, you must indicate that your facility is inactive and unstaffed on your NOI. If you are already covered under the permit and your facility has changed from active to inactive and unstaffed, you must modify and re-certify your NOI. You must also include a statement in your SWPPP per Part 6.2.5.2 indicating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to stormwater, in accordance with the substantive requirements in 40 CFR 122.26(g)(4)(iii). The statement must be signed and certified in accordance with Appendix B, Subsection 11. If circumstances change and industrial materials or activities become exposed to stormwater or your facility becomes active and/or staffed, this exception no longer applies, and you must immediately resume routine facility inspections. If you are not qualified for this exception at the time you become authorized under this permit, but during the permit term you become qualified because your facility becomes inactive and unstaffed, and there are no industrial materials or activities exposed to stormwater, you must include the same signed and certified statement as above and retain it with your records pursuant to Part 6.5.

Inactive and unstaffed facilities covered under Sectors G (Metal Mining), H (Coal Mines and Coal Mining-Related Facilities), and J (Non-Metallic Mineral Mining and Dressing) are not required to meet the "no industrial materials or activities exposed to stormwater" standard to be eligible for this exception from routine inspections, per Parts 8.G.8.4, 8.H.9.1, and 8.J.9.1.

3.1.6 **Routine Facility Inspection Documentation.** You must document the findings of your facility inspections and maintain this report with your SWPPP as required in Part 6.5. You must conduct any corrective action required as a result of a routine facility inspection consistent with Part 5. If you conducted a discharge visual assessment required in Part 3.2 during your facility inspection, you may include the results of the assessment with the report required in this Part, as long as you include all components of both types of inspections in the report.

Do not submit your routine facility inspection report to EPA, unless specifically requested to do so. However, you must summarize your findings in the Annual Report per Part 7.4. Document all findings, including but not limited to, the following information.

3.1.6.1 The inspection date and time;

3.1.6.2 The name(s) and signature(s) of the inspector(s);

3.1.6.3 Weather information;

3.1.6.4 All observations relating to the implementation of stormwater control measures at the facility, including:

- **a.** A description of any stormwater discharges occurring at the time of the inspection;
- **b.** Any previously unidentified stormwater discharges from and/or pollutants at the facility;
- **c.** Any evidence of, or the potential for, pollutants entering the stormwater drainage system;
- **d.** Observations regarding the physical condition of and around all stormwater discharge points, including any flow dissipation devices, and evidence of pollutants in discharges and/or the receiving water;
- **e.** Any stormwater control measures needing maintenance, repairs, or replacement;

3.1.6.5 Any additional stormwater control measures needed to comply with the permit requirements;

3.1.6.6 Any incidents of noncompliance; and

3.1.6.7 A statement, signed and certified in accordance with Appendix B, Subsection 11.

3.2 Quarterly Visual Assessment of Stormwater Discharges

3.2.1 **Visual Assessment Frequency.** Once each quarter for your entire permit coverage, you must collect a stormwater sample from each discharge point (except as noted in Part 3.2.4) and conduct a visual assessment of each of these samples. These samples are not required to be collected consistent with 40 CFR Part 136 procedures but must be collected in such a manner that the samples are representative of the stormwater discharge. Guidance on monitoring is available at https://www.epa.gov/sites/production/files/2015-11/documents/msgp_monitoring_guide.pdf.

3.2.2 **Visual Assessment Procedures.** You must do the following for the quarterly visual assessment:

3.2.2.1 Make the assessment of a stormwater discharge sample in a clean, colorless glass or plastic container, and examined in a well-lit area;

3.2.2.2 Make the assessment of the sample you collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes and you must document why it was not possible to take the sample within the first 30 minutes. In the case of snowmelt, samples must be taken during a period with a measurable discharge; and

3.2.2.3 For storm events, make the assessment on discharges that occur at least 72 hours (three days) from the previous discharge. The 72-hour (three-day) storm interval does not apply if you document that less than a 72-hour (three-day) interval is representative for local storm events during the sampling period.

3.2.2.4 Visually inspect or observe for the following water quality characteristics, which may be evidence of stormwater pollution:

a. Color;

b. Odor;

c. Clarity (diminished);

d. Floating solids;

e. Settled solids;

f. Suspended solids;

g. Foam;

h. Oil sheen; and

i. Other obvious indicators of stormwater pollution.

3.2.2.5 Whenever the visual assessment shows evidence of stormwater pollution in the discharge, you must initiate the corrective action procedures in Part 5.1.1.

3.2.3 **Visual Assessment Documentation**. You must document the results of your visual assessments and maintain this documentation onsite with your SWPPP as required in Part 6.5. Any corrective action required as a result of a quarterly visual assessment must be conducted consistent with Part 5 of this permit. You are not required to submit your visual assessment findings to EPA, unless specifically requested to do so. However, you must summarize your findings in the annual report per Part 7.4. Your documentation of the visual assessment must include, but not be limited to:

3.2.3.1 Sample location(s);

3.2.3.2 Sample collection date and time, and visual assessment date and time for each sample;

3.2.3.3 Personnel collecting the sample and conducting visual assessment, and their signatures;

3.2.3.4 Nature of the discharge (i.e., stormwater from rain or snow);

3.2.3.5 Results of observations of the stormwater discharge;

3.2.3.6 Probable sources of any observed stormwater contamination;

3.2.3.7 If applicable, why it was not possible to take samples within the first 30 minutes; and

3.2.3.8 A statement, signed and certified in accordance with Appendix B, Subsection 11.

3.2.4 Exceptions to Quarterly Visual Assessments

3.2.4.1 **Adverse Weather Conditions.** When adverse weather conditions prevent the collection of stormwater discharge sample(s) during the quarter, you must take a substitute

sample during the next qualifying storm event. Documentation of the rationale for no visual assessment for the quarter must be included with your SWPPP records as described in Part 6.5. Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, electrical storms, or situations that otherwise make sampling impractical, such as extended frozen conditions.

3.2.4.2 **Climates with Irregular Stormwater Discharges.** If your facility is located in an area where limited rainfall occurs during many parts of the year (e.g., arid or semi-arid climate) or in an area where freezing conditions exist that prevent discharges from occurring for extended periods, then your samples for the quarterly visual assessments may be distributed during seasons when precipitation more regularly occurs.

3.2.4.3 **Areas that Receive Snow.** If the facility is in an area that typically receives snow and the facility receives snow at least once over a period of four quarters, at least one quarterly visual assessment must capture snowmelt discharge, as described in Part 4.1.3, taking into account the exception described above for climates with irregular stormwater discharges.

3.2.4.4 **Inactive and Unstaffed Facilities.** The requirement for a quarterly visual assessment does not apply at a facility that is inactive and unstaffed, as long as there are no industrial materials or activities exposed to stormwater. To invoke this exception, you must maintain a statement in your SWPPP per Part 6.2.5.2 indicating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to precipitation, in accordance with the substantive requirements in 40 CFR 122.26(g)(4)(iii). The statement must be signed and certified in accordance with Appendix B, Subsection 11. If circumstances change and industrial materials or activities become exposed to stormwater or your facility becomes active and/or staffed, this exception no longer applies, and you must immediately resume quarterly visual assessments. If you are not qualified for this exception at the time you are authorized under this permit, but during the permit term you become qualified because your facility becomes inactive and unstaffed, and there are no industrial materials or activities that are exposed to stormwater, then you must include the same signed and certified statement as above and retain it with your records pursuant to Part 6.5. Inactive and unstaffed facilities covered under Sectors G (Metal Mining), H (Coal Mines and Coal Mining-Related Facilities), and J (Non-Metallic Mineral Mining and Dressing), are not required to meet the "no industrial materials or activities exposed to stormwater" standard to be eligible for this exception from quarterly visual assessments, consistent with the requirements established in Parts 8.G.8.4, 8.H.9.1, and 8.J.9.1.

3.2.4.5 **Substantially Identical Discharge Points (SIDP).** If your facility has two or more discharge points that discharge substantially identical stormwater effluents, as documented in Part 6.2.5.3, you may conduct quarterly visual assessments of the discharge at just one of the discharge points and report that the results also apply to the SIDPs provided that you conduct visual assessments on a rotating basis of each SIDP throughout the period of your coverage under this permit. If stormwater contamination is identified through visual assessment conducted at a SIDP, you must assess and modify your stormwater control measures as appropriate for each discharge point represented by the monitored discharge point.

4. Monitoring

You must collect and analyze stormwater samples and document monitoring activities consistent with the procedures described in Part 4 and Appendix B, Subsections B.10 – 12, and any additional sector-specific or state/tribal-specific requirements in Parts 8 and 9, respectively. Refer to Part 7 for reporting and recordkeeping requirements.

4.1 Monitoring Procedures

4.1.1 Monitored Stormwater Discharge Points. Applicable monitoring requirements apply to each discharge point authorized by this permit, except as otherwise exempt from monitoring as a "substantially identical discharge point" (SIDP). If your facility has two or more discharge points that you believe discharge substantially identical stormwater effluents, based on the similarities of the general industrial activities and control measures, exposed materials that may significantly contribute pollutants to stormwater, and runoff coefficients of their drainage areas, you may monitor the effluent of just one of the discharge points and report that the results also apply to the SIDP(s). As required in Part 6.2.5.3, your SWPPP must identify each discharge point authorized by this permit and describe the rationale for any SIDP determinations. The allowance for monitoring only one of the SIDP is not applicable to any discharge points with numeric effluent limitations. You are required to monitor each discharge point covered by a numeric effluent limit as identified in Part 4.2.2.

4.1.2 Commingled Discharges. If any authorized stormwater discharges commingle with discharges not authorized under this permit, you must conduct any required sampling of the authorized discharges at a point before they mix with other waste streams, to the extent practicable.

4.1.3 Measurable Storm Events. You must conduct all required monitoring on a storm event that results in an actual discharge ("measurable storm event") that follows the preceding measurable storm event by at least 72 hours (three days). The 72-hour (3-day) storm interval does not apply if you are able to document that less than a 72-hour (3-day) interval is representative for local storm events during the sampling period. In the case of snowmelt, you must conduct monitoring at a time when a measurable discharge occurs.

For each monitoring event, except snowmelt monitoring, you must identify the date and duration (in hours) of the rainfall event, rainfall total (in inches) for that rainfall event, and time (in days) since the previous measurable storm event. For snowmelt monitoring, you must identify the date of the sampling event.

4.1.4 Sample Type. You must take a minimum of one grab sample from a discharge resulting from a measurable storm event as described in Part 4.1.3. You must collect samples within the first 30 minutes of a discharge associated with a measurable storm event. If it is not possible to collect the sample within the first 30 minutes of a measurable storm event, you must collect the sample as soon as possible after the first 30 minutes and keep documentation with the SWPPP explaining why it was not possible to take samples within the first 30 minutes. In the case of snowmelt, you must take samples during a period with a measurable discharge.

For indicator monitoring and benchmark monitoring, you may choose to use a composite sampling method instead of taking grab samples. This composite method may be either flow-weighted or time-weighted and performed manually or with the use of automated sampling equipment. For the purposes of this permit, a flow-

weighted composite sample means a composite sample consisting of a mixture of aliquots collected at a constant or variable time interval, where the volume of each aliquot included in the composite sample is proportional to the estimated or measured incremental discharge volume at the time of the aliquot collection compared to the total discharge volume estimated or measured over the monitoring event. For the purposes of this permit, a time-weighted composite sample means a composite sample consisting of a mixture of equal volume aliquots collected at a regular defined time interval over a specific period of time. Composite sampling must be initiated during the first 30 minutes of the same storm event. If it is not possible to initiate composite sampling within the first 30 minutes of a measurable storm event, you must initiate composite sampling as soon as possible after the first 30 minutes and keep documentation with the SWPPP explaining why it was not possible to initiate composite sampling within the first 30 minutes. You must submit all monitoring results to EPA per Part 4.1.9. Composite sampling may not be used in situations where hold times for processing or sample preservation requirements cannot be satisfied. For parameters measured in-situ with a probe or meter such as dissolved oxygen, conductivity, pH, or temperature, the composite sampling method shall be modified by calculating an average all individual measurements, weighted by flow volume if applicable.

4.1.5 **Adverse Weather Conditions.** When adverse weather conditions as described in Part 3.2.4.1 prevent the collection of stormwater discharge samples according to the relevant monitoring schedule, you must take a substitute sample during the next qualifying storm event. Adverse weather does not exempt you from having to file a benchmark monitoring report in accordance with your sampling schedule. As specified in Part 7.4, you must indicate in Net-DMR any failure to monitor during the regular reporting period.

4.1.6 **Facilities in Climates with Irregular Stormwater Discharges.** If your facility is located in areas where limited rainfall occurs during parts of the year (e.g., arid or semi-arid climates) or in areas where freezing conditions exist that prevent discharges from occurring for extended periods, you may distribute your required monitoring events during seasons when precipitation occurs, or when snowmelt results in a measurable discharge from your facility. You must still collect the required number of samples. As specified in Part 7.4, you must also indicate in Net-DMR that there was no monitoring for the respective monitoring period.

4.1.7 **Monitoring Periods.** Your monitoring requirements in this permit begin in the first full quarter following either May 30, 2021or your date of discharge authorization, whichever date comes later.

- January 1 – March 31
- April 1 – June 30
- July 1 – September 30
- October 1 – December 31

For example, if you obtain permit coverage on April 10, 2021, then your first monitoring quarter for benchmark monitoring is– July 1, 2021 – September 30, 2021 and your first monitoring year for discharges to impaired waters or discharges subject to an effluent limitation guideline is July 1, 2021 – June 30, 2022. This monitoring schedule may be modified in accordance with Part 4.1.6 if you document the revised schedule in your SWPPP. However, you must indicate in Net-DMR any 3-month interval that you did not take a sample.

4.1.8 **Monitoring for Authorized Non-Stormwater Discharges.** You are only required to monitor authorized non-stormwater discharges (as delineated in Part 1.2.2) when they are commingled with stormwater discharges associated with industrial activity.

4.1.9 **Monitoring Reports.** You must report monitoring data using Net-DMR, EPA's electronic DMR tool, as described in Part 7.3 (unless the applicable EPA Regional Office grants you a waiver from electronic reporting, in which case you may submit a paper DMR form).

4.2 Required Monitoring

This permit includes six types of required analytical monitoring, one or more of which may apply to your stormwater discharge:

- Indicator monitoring (Part 4.2.1);
- Benchmark monitoring (Part 4.2.2);
- Annual effluent limitations guidelines monitoring (Part 4.2.3);
- State- or tribal-specific monitoring (Part 4.2.4);
- Impaired waters monitoring (Part 4.2.5); and
- Other monitoring as required by EPA (Part 4.2.6).

Unless otherwise specified, samples must be analyzed consistent with 40 CFR Part 136 analytical methods that are sufficiently sensitive for the monitored parameter. When more than one type of monitoring for the same pollutant at the same discharge point applies (e.g., total suspended solids once per year for an effluent limitation and once per quarter for benchmark monitoring at a given discharge point), you may use a single sample to satisfy both monitoring requirements (i.e., one sample satisfying both the annual effluent limitation sample and one of the four quarterly benchmark monitoring samples). Similarly, when the same type of monitoring is required for the same pollutant but for different activities, you may use a single sample to satisfy both monitoring requirements (i.e., when you are required to monitor for PAHs in stormwater discharges from paved surfaces that will be sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit and you are also required to monitor for PAHs in stormwater discharges since you manufacture, use, or store creosote or creosote-treated wood in areas that are exposed to precipitation).

When the effluent limitation is lower than the benchmark threshold for the same pollutant, your Additional Implementation Measure (AIM) trigger is based on an exceedance of the effluent limitation threshold, which would subject you to the AIM requirements of Part 5.2. Exceedance of an effluent limitation associated with the results of any analytical monitoring type required by this Part subjects you to the corrective action requirements of Part 5.1. You must conduct all required monitoring in accordance with the procedures described in Appendix B, Subsection B.10.

Per Part 1.3.7, in the event that the permit is administratively continued, monitoring requirements remain in force and effect at their original frequency during any continuance for operators that were covered prior to permit expiration. In the event that monitoring results are unable to be electronically reported in Net-DMR, operators must maintain monitoring results and records within their SWPPP.

Table 4-1. Summary of Each Type of Monitoring

Monitoring Type	Monitoring Type Applies To	Frequency	Duration	Follow-up Action	Permit Part Reference
Indicator – pH, TSS, COD	Subsectors B2, C5, D2, E3, F5, I1, J3, L2, N2, O1, P1, R1, T1, U3, V1, W1, X1, Y2, Z1, AB1, AC1, and AD1	Quarterly	Entirety of permit coverage	None	Part 4.2.1.1.a
Indicator – PAHs*	Operators with stormwater discharges from paved surfaces that will be sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit; sectors; Sector A facilities that manufacture, use, or store creosote or creosote-treated wood in areas that are exposed to precipitation; and Sectors C (SIC 2911), D, F, H, I, M, O, P (SIC 4011, 4013, and 5171), Q (SIC 4491), R, and S	Bi-annually (2 times per year)	First year and fourth year	None	Part 4.2.1.1.b
Benchmark	Subsectors A1, A2, A3, A4, B1, C1, C2, C3, C4, D1, E1, E2, F1, F2, F3, F4, G1, G2, H1, J1, J2, K1, L1, M1, N1, Q1, S1, U1, U2, Y1, AA1, AA2	Quarterly	First year and fourth year	AIM. See Part 5.2.	Part 4.2.2
Effluent limitation guidelines (ELG)	See Part 4.2.3	Annually	Entirety of permit coverage	See Part 5.1	Part 4.2.3
State- or tribal-specific	Depends on the discharge location of your facility. See Part 9				
Impaired Waters	Depends on the receiving waterbody. See Part 4.2.5				
Other as required by EPA	See Part 4.2.6				

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

4.2.1 **Indicator Monitoring.** This permit requires indicator monitoring of stormwater discharges for three parameters – pH, Total Suspended Solids (TSS), and Chemical Oxygen Demand (COD) – for certain sectors/subsectors (see Part 4.2.1.1.a below) and for polycyclic aromatic hydrocarbons (PAHs) for certain sectors/activities, with additional limitations (see Part 4.2.1.1.b below). Indicator monitoring data will provide you and EPA with a baseline and comparable understanding of industrial stormwater discharge quality and potential water quality problems. The indicator monitoring parameters are "report-only" and do not have thresholds or baseline values for comparison, therefore no follow-up action is triggered or required under this part. The requirement in Part 2.2.1

that your stormwater discharge be controlled as necessary such that the receiving water of the United States will meet applicable water quality standards still applies. You may find it useful to evaluate and compare your indicator monitoring data over time to identify any fluctuating values and why they may be occurring, and to further inform any revisions to your SWPPP/SCMs if necessary.[11] Indicator monitoring is report-only and is neither benchmark monitoring nor an effluent limitation. Instead, it is a permit condition. Thus, failure to conduct indicator monitoring is a permit violation.

4.2.1.1 Applicability and Schedule of Indicator Monitoring

a. pH, Total Suspended Solids (TSS), and Chemical Oxygen Demand (COD).

i. Applicability. Operators in the following subsectors must monitor stormwater discharges for pH, TSS, and COD (also specified in the sector-specific requirements in Part 8): B2, C5, D2, E3, F5, I1, J3, L2, N2, O1, P1, R1, T1, U3, V1, W1, X1, Y2, Z1, AB1, AC1, and AD1). Samples must be analyzed consistent with 40 CFR Part 136 analytical methods.

ii. Schedule. You must conduct indicator monitoring of stormwater discharges for pH, TSS, and COD each quarter, beginning in your first full quarter of permit coverage as identified in Part 4.1.7.

b. Polycyclic Aromatic Hydrocarbons (PAH).

i. Applicability. The following operators must monitor stormwater discharges for the 16 individual priority pollutant PAHs (also specified in the sector-specific requirements in Part 8): operators in all sectors with stormwater discharges from paved surfaces that will be sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit; operators in sectors A (facilities that manufacture, use, or store creosote or creosote-treated wood in areas that are exposed to precipitation), C (SIC Code 2911), D, F, H, I, M, O, P (SIC Codes 4011, 4013, and 5171), Q (SIC Code 4491), R, and S. Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene. Samples must be analyzed using EPA Method 625.1, or EPA Method 610/Standard Method 6440B if preferred by the operator, consistent with 40 CFR Part 136 analytical methods.

ii. Schedule. You must conduct indicator monitoring of stormwater discharges for PAHs bi-annually (i.e., sample twice per year) in the first and fourth years of permit coverage. Your first year of permit coverage begins in your first full quarter of permit coverage, identified in Part 4.1.7, commencing no earlier than May 30, 2021, followed by two years of no monitoring. Bi-annual monitoring resumes in your fourth year of permit coverage for another year,

[11] Examples of possible reviews and revisions to the SWPPP/SCMs that could be informed by indicator monitoring values include: reviewing sources of pollution or any changes to performed industrial activities and processes; reviewing spill and leak procedures, and/or non-stormwater discharges; conducting a single comprehensive clean-up, implementing a new control measure, and/or increasing inspections. EPA notes, however, that these actions are not required under the 2021 MSGP in response to indicator monitoring.

after which you may discontinue bi-annual PAH monitoring for the remainder of your permit coverage.

4.2.1.2 **Exception for Facilities in Climates with Irregular Stormwater Discharges**. As described in Part 4.1.6, facilities in climates with irregular stormwater discharges may modify this schedule provided you report this revised schedule directly to EPA by the due date of the first indicator monitoring sample (see EPA Regional contacts in Part 7.8), and you keep this revised schedule with the facility's SWPPP as specified in Part 6.5. As noted in Part 4.1.7, you must indicate in Net-DMR any 3-month interval that you did not take a sample.

4.2.1.3 **Exception for Inactive and Unstaffed Facilities.** The requirement for indicator monitoring does not apply at a facility that is inactive and unstaffed, provided that there are no industrial materials or activities exposed to stormwater. To invoke this exception, you must do the following:

a. Maintain a statement with your SWPPP stating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to stormwater in accordance with the substantive requirements in 40 CFR 122.26(g) and sign and certify the statement in accordance with Appendix B, Subsection 11.

b. If circumstances change and industrial materials or activities become exposed to stormwater or your facility becomes active and/or staffed, this exception no longer applies and you must immediately begin complying with the applicable indicator monitoring requirements under Part 4.2.1 as if you were in your first year of permit coverage. You must indicate in your NOI that your facility has materials or activities exposed to stormwater or has become active and/or staffed.

c. If you are not qualified for this exception at the time you are authorized under this permit, but during the permit term you become qualified because your facility is inactive and unstaffed, and there are no industrial materials or activities that are exposed to stormwater, then you must notify EPA of this change on your NOI form. You may discontinue indicator monitoring once you have notified EPA, and prepared and signed the certification statement described above concerning your facility's qualification for this special exception.

Note: This exception has different requirements for Sectors G, H, and J (see Part 8).

4.2.2 **Benchmark Monitoring.** This permit requires benchmark monitoring parameters of stormwater discharges for certain sectors/subsectors. Benchmark monitoring data are primarily for your use to determine the overall effectiveness of your stormwater control measures and to assist you in determining when additional action(s) may be necessary to comply with the effluent limitations in Part 2.

The benchmark thresholds are not effluent limitations; a benchmark exceedance, therefore, is not a permit violation. However, if a benchmark exceedance triggers Additional Implementation Measures (AIM) in Part 5.2, failure to conduct any required measures is a permit violation. At your discretion, you may take more than four samples during separate stormwater discharge events to determine the average benchmark parameter value for facility discharges.

4.2.2.1 Applicability of Benchmark Monitoring.

You must monitor stormwater discharges for any benchmark parameters specified for the industrial sector(s), both primary industrial activity and any co-located industrial activities, applicable to your discharge listed in Part 8. If your facility is in one of the industrial sectors subject to benchmark thresholds that are hardness-dependent, you must include in your NOI a hardness value, established consistent with the procedures in Appendix J, that is representative of your receiving water. Hardness is not a specific benchmark and therefore the permit does not include a benchmark threshold with which to compare.

Samples must be analyzed consistent with 40 CFR Part 136 analytical methods and using test procedures with quantitation limits at or below benchmark thresholds for all benchmark parameters for which you are required to sample, i.e. sufficiently sensitive methods. For averaging purposes, you may use a value of zero for any individual sample parameter which is determined to be less than the method detection limit. For sample values that fall between the method detection limit and the quantitation limit (i.e., a confirmed detection but below the level that can be reliably quantified), use a value halfway between zero and the quantitation limit.

4.2.2.2 Summary of the 2021 MSGP Benchmark Thresholds

The Table 4-2 presents the 2021 MSGP's freshwater and saltwater benchmark thresholds. Sector-specific benchmark requirements are detailed in Part 8. Values match the original units found in the source documents, detailed in the corresponding section of the fact sheet.

Table 4-2 2021 MSGP Benchmark Thresholds

Pollutant		2021 MSGP Benchmark Threshold
Total Recoverable Aluminum (T)		1,100 µg/L
Total Recoverable Beryllium		130 µg/L
Biochemical Oxygen Demand (5-day)		30 mg/L
pH		6.0 – 9.0 s.u.
Chemical Oxygen Demand		120 mg/L
Total Phosphorus		2.0 mg/L
Total Suspended Solids (TSS)		100 mg/L
Nitrate and Nitrite Nitrogen		0.68 mg/L
Turbidity		50 NTU
Total Recoverable Antimony		640 µg/L
Ammonia		2.14 mg/L
Total Recoverable Cadmium	Freshwater [a]	1.8 µg/L
	Saltwater	33 µg/L
Total Recoverable Copper	Freshwater	5.19 µg/L
	Saltwater	4.8 µg/L

Pollutant		2021 MSGP Benchmark Threshold
Total Recoverable Cyanide	Freshwater	22 µg/L
	Saltwater	1 µg/L
Total Recoverable Mercury	Freshwater	1.4 µg/L
	Saltwater	1.8 µg/L
Total Recoverable Nickel	Freshwater [a]	470 µg/L
	Saltwater	74 µg/L
Total Recoverable Selenium	Freshwater	1.5 µg/L for still/standing (lentic) waters 3.1 µg/L for flowing (lotic) waters
	Saltwater	290 µg/L
Total Recoverable Silver	Freshwater [a]	3.2 µg/L
	Saltwater	1.9 µg/L
Total Recoverable Zinc	Freshwater [a]	120 µg/L
	Saltwater	90 µg/L
Total Recoverable Arsenic	Freshwater [a]	150 µg/L
	Saltwater	69 µg/L
Total Recoverable Lead	Freshwater [a]	82 µg/L
	Saltwater	210 µg/L

[a] These pollutants are dependent on water hardness where discharged into freshwaters. The freshwater benchmark value listed is based on a hardness of 100 mg/L. When a facility analyzes receiving water samples for hardness, the operator must use the hardness ranges provided in Table 1 in Appendix J of the 2021 MSGP and in the appropriate tables in Part 8 of the 2021 MSGP to determine applicable benchmark values for that facility. Benchmark thresholds for discharges of these pollutants into saline waters are not dependent on receiving water hardness and do not need to be adjusted.

4.2.2.3 **Benchmark Monitoring Schedule.** Benchmark monitoring of stormwater discharges is required quarterly, as identified in Part 4.1.7, in the first and fourth year of permit coverage, as follows:

a. **Year one of permit coverage:** You must conduct benchmark monitoring for all parameters applicable to your subsector(s) for four quarters in your first year of permit coverage, beginning in your first *full* quarter of permit coverage, no earlier than May 30, 2021.

i. If the annual average[12] for a parameter does not exceed the benchmark threshold, you can discontinue benchmark monitoring for that parameter for the next two years (i.e., eight quarters).

[12] For this permit, an annual average exceedance for a parameter can occur if: (a) The four-quarter annual average for a parameter exceeds the benchmark threshold; or (b) Fewer than four quarterly samples are collected, but a single sample or the sum of any sample results within the sampling year exceeds the benchmark threshold by more than four times for a parameter. The result in (b) indicates an exceedance is mathematically certain (i.e., the sum of quarterly sample results to date is already more than four times the benchmark threshold). For pH, an annual average exceedance can only occur if the four-quarter annual average exceeds the benchmark threshold.

ii. If the annual average for a parameter exceeds the benchmark threshold, you must comply with Part 5.2 (Additional Implementation Measures responses and deadlines) and continue quarterly benchmark monitoring for that parameter until results indicate that the annual average is no longer exceeded, after which you can discontinue benchmark monitoring for that parameter until monitoring resumes in year four of permit coverage, per Part 4.2.2.3.b below.

b. Year four of permit coverage: You must conduct benchmark monitoring for all parameters applicable to your subsector(s) for four quarters in your fourth year of permit coverage (i.e., your thirteenth through sixteenth quarters), unless the first quarter of your fourth year of permit coverage occurs on or after the date this permit expires.

i. If the annual average[13] for a parameter does not exceed the benchmark threshold, you can discontinue benchmark monitoring for that parameter for the remainder of your permit coverage.

ii. If the annual average for a parameter exceeds the benchmark threshold, you must comply with Part 5.2 (Additional Implementation Measures responses and deadlines) and continue quarterly benchmark monitoring for that parameter until results indicate that the annual average is no longer exceeded, after which you can discontinue benchmark monitoring for that parameter for the remainder of permit coverage.

4.2.2.4 **Exception for Facilities in Climates with Irregular Stormwater Discharges**. As described in Part 4.1.6, facilities in climates with irregular stormwater discharges may modify this quarterly schedule provided you report this revised schedule directly to EPA by the due date of the first benchmark sample (see EPA Regional contacts in Part 7.8), and you keep this revised schedule with the facility's SWPPP as specified in Part 6.5. When conditions prevent you from obtaining four samples in four consecutive quarters, you must continue monitoring until you have the four samples required for calculating your benchmark monitoring average. As noted in Part 4.1.7, you must indicate in Net-DMR any 3-month interval that you did not take a sample.

4.2.2.5 **Exception for Inactive and Unstaffed Facilities.** The requirement for benchmark monitoring does not apply at a facility that is inactive and unstaffed, provided that there are no industrial materials or activities exposed to stormwater. To invoke this exception, you must do the following:

a. Maintain a statement with your SWPPP stating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to stormwater in accordance with the substantive requirements in 40 CFR 122.26(g) and sign and certify the statement in accordance with Appendix B, Subsection 11.

b. If circumstances change and industrial materials or activities become exposed to stormwater or your facility becomes active and/or staffed, this exception no longer applies and you must immediately begin complying with the applicable benchmark monitoring requirements under Part 4.2.2 as if you were in your first year of permit coverage. You must indicate in your NOI that your facility has

[13] *Ibid*.

materials or activities exposed to stormwater or has become active and/or staffed.

c. If you are not qualified for this exception at the time you are authorized under this permit, but during the permit term you become qualified because your facility is inactive and unstaffed, and there are no industrial materials or activities that are exposed to stormwater, then you must notify EPA of this change on your NOI form. You may discontinue benchmark monitoring once you have notified EPA, and prepared and signed the certification statement described above concerning your facility's qualification for this special exception.

Note: This exception has different requirements for Sectors G, H, and J (see Part 8).

4.2.3 Effluent Limitations Monitoring

4.2.3.1 Monitoring Based on Effluent Limitations Guidelines. Table 4-3 identifies the stormwater discharges subject to effluent limitation guidelines that are authorized for coverage under this permit. An exceedance of the effluent limitation is a permit violation. Beginning in the first full quarter following May 30, 2021 or your date of discharge authorization, whichever date comes later, you must monitor once per year at each stormwater discharge point containing the discharges identified in Table 4-3 for the parameters specified in the sector-specific section of Part 8.

Table 4-3. Required Monitoring for Effluent Limits Based on Effluent Limitations Guidelines

Regulated Activity	Effluent Limit	Monitoring Frequency	Sample Type
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	See Part 8.A.8	1/year	Grab
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	See Part 8.C.5	1/year	Grab
Runoff from asphalt emulsion facilities	See Part 8.D.5	1/year	Grab
Runoff from material storage piles at cement manufacturing facilities	See Part 8.E.6	1/year	Grab
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	See Part 8.J.10	1/year	Grab
Runoff from hazardous waste landfills	See Part 8.K.7	1/year	Grab
Runoff from non-hazardous waste landfills	See Part 8.L.11	1/year	Grab
Runoff from coal storage piles at steam electric generating facilities	See Part 8.O.8	1/year	Grab
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non- propeller aircraft departures.	See Part 8.S.9	1/year	Grab

4.2.3.2 Substantially Identical Discharge Points Not Applicable. You must monitor each discharge point discharging stormwater from any regulated activity identified in Table

4-3. The substantially identical discharge points (SIDP) monitoring provisions are not available for numeric effluent limit monitoring.

4.2.3.3 **Follow-up Actions if Discharge Exceeds Numeric Effluent Limitation.** If any monitoring value exceeds a numeric effluent limitation contained in this permit, you must indicate the exceedance on a "Change NOI" form in the NPDES eReporting Tool (NeT), and you must conduct follow-up monitoring within 30 calendar days (or during the next measurable storm event, should none occur within 30 days) of implementing corrective action(s) taken per Part 5.1. If your follow-up monitoring exceeds the applicable effluent limitation, you must:

a. **Submit an Exceedance Report:** You must submit an Exceedance Report no later than 30 days after you have received your laboratory result consistent with Part 7.5; and

b. **Continue to Monitor:** You must monitor, at least quarterly, until your stormwater discharge is in compliance with the effluent limit or until EPA waives the requirement for additional monitoring. Once your discharge is back in compliance with the effluent limitation you must indicate this on a "Change NOI" form per Part 7.3.

4.2.4 State or Tribal Required Monitoring

4.2.4.1 **Sectors Required to Conduct State or Tribal Monitoring.** You must comply with any state or tribal monitoring requirements in Part 9 of the permit applicable to your facility's discharge location.

4.2.4.2 **State or Tribal Monitoring Schedule.** If a monitoring frequency is not specified for an applicable requirement in Part 9, you must monitor once per year for the duration of your permit coverage.

4.2.5 **Impaired Waters Monitoring.** For the purposes of this permit, your facility is considered to discharge to an impaired water if the first water of the United States to which you discharge is identified by a state, tribe, or EPA pursuant to section 303(d) of the CWA as not meeting an applicable water quality standard (i.e., without an EPA-approved or -established TMDL, see Part 4.2.5.1.a below), or has been removed from the 303(d) list either because the impairments are addressed by an EPA-approved or established TMDL or is covered by pollution control requirements that meet the requirements of 40 CFR 130.7(b)(1) (see Part 4.2.5.1.b below). For discharges that enter a separate storm sewer system[14] prior to discharge, the first water of the United States to which you discharge is the waterbody that receives the stormwater discharge from the separate storm sewer system.

4.2.5.1 Facilities Required to Monitor Stormwater Discharges to Impaired Waters.

a. Discharges to impaired waters without an EPA-approved or established TMDL:

Monitoring is required annually in the first year of permit coverage and again in the fourth year of permit coverage as follows, unless you detect a pollutant causing an impairment, in which case annual monitoring must continue.

[14] Separate storm sewer systems do not include combined sewer systems or sanitary sewer systems. Separate storm sewer systems include both municipal storm sewer systems (MS4s) and non-municipal separate storm sewers.

i. **Year one of permit coverage:** You must take your first annual sample in your first year of permit coverage, which begins in the first full quarter following May 30, 2021 or your date of discharge authorization, whichever date comes later. You must monitor for all pollutants causing impairments using a standard analytical method, provided one exists (see 40 CFR Part 136), once at each discharge point (except substantially identical discharge points) discharging stormwater to impaired waters without an EPA-approved or established TMDL. *Note*: Except where otherwise directed by EPA, if the pollutant of concern for the impaired waterbody is suspended solids, turbidity, or sediment/sedimentation, you must monitor for Total Suspended Solids (TSS). If a pollutant of concern is expressed in the form of an indicator or surrogate pollutant, you must monitor for that indicator or surrogate pollutant. No monitoring is required when a waterbody's biological communities are impaired but no pollutant, including indicator or surrogate pollutants, is specified as causing the impairment, or when a waterbody's impairment is related to hydrologic modifications, impaired hydrology, or other non-pollutant. Operators must consult the applicable EPA Regional Office for any available guidance regarding required monitoring parameters under this part.

   1) If monitoring results indicate the monitored pollutant is not detected in your discharge, or is within the acceptable range for a given parameter for the waterbody to meet its designated use (e.g., pH or temperature),[15] you may discontinue monitoring for that pollutant for the next two years. You must resume monitoring for that pollutant in year four of permit coverage, if applicable, per Part 4.2.5.1.a.ii.

   2) If monitoring results indicate that the monitored pollutant is detected in your stormwater discharge, or is outside the acceptable range for a given parameter (e.g., pH or temperature) for the waterbody to meet its designated use,[16] you must continue to monitor for the pollutant(s) annually until no longer detected, after which you may discontinue monitoring for that pollutant until monitoring resumes in year four of permit coverage, if applicable, per Part 4.2.5.1.a.ii.

ii. **Year four of permit coverage.** Annual monitoring resumes in your fourth year of permit coverage for another year for a sub-set of parameters monitored for in the first monitoring year. In the fourth year of permit coverage, you must monitor for all pollutants causing impairment(s) that are associated with your industrial activity and/or are listed as a benchmark parameter for your subsector(s) (regardless of whether you have satisfied benchmark monitoring for the parameter per Part 4.2.2). To determine these pollutants, start with the list of pollutants for which the receiving waterbody is impaired and for which a standard analytical method exists (see 40 CFR Part 136), then compare that list to the industrial pollutants you identified in Part 6.2.3.2 and any sector-specific benchmark monitoring pollutants in Part 8 and, if applicable, Part 9. You must monitor for pollutants that appear on both the impairments list and either your industrial pollutants and/or your benchmark parameter list, including "indicator" or "surrogate" pollutants (as described in the "note" in 1 above). You must monitor once at each discharge point (except

[15] Refer to your state's Water Quality Standards or contact the EPA Regional Office for assistance.
[16] *Ibid*.

substantially identical discharge points (SIDPs)) for these pollutants. Consistent with Part 4.2, annual samples may be used to also satisfy any single remaining quarterly benchmark monitoring requirement applicable to your discharge.

1) If monitoring results indicate the monitored pollutant is not detected in your discharge, or is within the acceptable range for a given parameter for the waterbody to meet its designated use (e.g., pH or temperature),[17] you may discontinue monitoring for that pollutant for the remainder of your permit coverage.

2) If the monitoring results indicate that the monitored pollutant is detected in your discharge, or is outside the acceptable range for a given parameter (e.g., pH or temperature) for the waterbody to meet its designated use, you must continue to monitor for the pollutant(s) annually until no longer detected, after which you may discontinue monitoring for that pollutant for the remainder of your permit coverage.

iii. ***Exception****:* If sampling results in either Part 4.2.5.1.a.i or Part 4.2.5.1.a.ii above indicate the monitored pollutant is detected in your discharge, but you have determined that its presence is caused solely by natural background sources, you may discontinue monitoring for that pollutant for the duration of your permit coverage.

To support a determination that the pollutant's presence is caused solely by natural background sources, you must document and maintain with your SWPPP, as required by Part 6.5:

1) An explanation of why you believe that the presence of the pollutant of concern in your discharge is not related to the activities or materials at your facility; and

2) Data and/or studies that tie the presence of the pollutant of concern inyour discharge to natural background sources in the watershed.

Natural background pollutants include those that occur naturally as a result of native soils, and vegetation, wildlife, or ground water. Natural background pollutants do not include legacy pollutants from earlier activity on your site, or pollutants in run-on from neighboring sources that are not naturally occurring. However, you may be eligible to discontinue annual monitoring for pollutants that occur solely from these sources and should consult the applicable EPA Regional Office for related guidance.

b. Discharges to impaired waters with an EPA-approved or established TMDL: For stormwater discharges to waters for which there is an EPA-approved or established TMDL, you are not required to monitor for the pollutant(s) for which the TMDL was written unless EPA informs you, upon examination of the applicable TMDL and its wasteload allocation, that you are subject to such a requirement consistent with the assumptions and findings of the applicable TMDL and its wasteload allocation. EPA's notice will include specifications on stormwater discharge monitoring parameters and frequency. If there are questions, you may consult the applicable EPA Regional Office for guidance regarding required monitoring under this Part.

[17] *Ibid*.

4.2.5.2 **Exception for Inactive and Unstaffed Facilities.** The requirement for impaired waters monitoring does not apply at a facility that is inactive and unstaffed, as long as there are no industrial materials or activities exposed to stormwater. To invoke this exception, you must do the following:

a. Maintain a statement with your SWPPP stating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to stormwater in accordance with the substantive requirements in 40 CFR 122.26(g) and sign and certify the statement in accordance with Appendix B, Subsection 11.

b. If circumstances change and industrial materials or activities become exposed to stormwater or your facility becomes active and/or staffed, this exception no longer applies and you must immediately begin complying with the applicable impaired waters monitoring requirements under Part 4.2.5 as if you were in your first year of permit coverage. You must indicate in a "Change NOI" form per Part 7.2 that your facility has materials or activities exposed to stormwater or has become active and/or staffed.

c. If you are not qualified for this exception at the time you are authorized under this permit, but during the permit term you become qualified because your facility is inactive and unstaffed, and there are no industrial materials or activities that are exposed to stormwater, then you must notify EPA of this change on your NOI form. You may discontinue impaired waters monitoring once you have notified EPA, and prepared and signed the certification statement described above concerning your facility's qualification for this special exception.

Note: This exception has different requirements for Sectors G, H, and J (see Part 8).

4.2.6 **Additional Monitoring Required by EPA.** EPA may notify you of additional stormwater discharge monitoring requirements that EPA determines are necessary to meet the permit's effluent limitations. Any such notice will briefly state the reasons for the monitoring, locations, and parameters to be monitored, frequency and period of monitoring, sample types, and reporting requirements.

5. Corrective Actions and Additional Implementation Measures (AIM)

5.1 Corrective Action

5.1.1 **Conditions Requiring SWPPP Review and Revision to Ensure Effluent Limits are Met.** When any of the following conditions occur or are detected during an inspection, monitoring or other means, or EPA or the operator of the MS4 through which you discharge informs you that any of the following conditions have occurred, you must review and revise, as appropriate, your SWPPP (e.g., sources of pollution; spill and leak procedures; non-stormwater discharges; the selection, design, installation and implementation of your stormwater control measures) so that this permit's effluent limits are met and pollutant discharges are minimized:

5.1.1.1 An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this or another NPDES permit to a water of the United States) occurs at your facility.

5.1.1.2 A discharge violates a numeric effluent limit listed in Table 2-1 and/or in your Part 8 sector-specific requirements.

5.1.1.3 Your stormwater control measures are not stringent enough for your stormwater discharge to be controlled as necessary such that the receiving water of the United States will meet applicable water quality standards or to meet the non-numeric effluent limits in this permit.

5.1.1.4 A required control measure was never installed, was installed incorrectly, ornot in accordance with Parts 2 and/or 8, or is not being properly operated or maintained.

5.1.1.5 Whenever a visual assessment shows evidence of stormwater pollution (e.g., color, odor, floating solids, settled solids, suspended solids, foam).

5.1.2 **Conditions Requiring SWPPP Review to Determine if Modifications Are Necessary.** If construction or a change in design, operation, or maintenance at your facility occurs that significantly changes the nature of pollutants discharged via stormwater from your facility, or significantly increases the quantity of pollutants discharged, you must review your SWPPP (e.g., sources of pollution, spill and leak procedures, non-stormwater discharges, selection, design, installation and implementation of your stormwater control measures) to determine if modifications are necessary to meet the effluent limits in this permit.

5.1.3 Deadlines for Corrective Actions

5.1.3.1 **Immediate Actions.** You must immediately take all reasonable steps to minimize or prevent the discharge of pollutants until you can implement a permanent solution, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events. In Part 5, the term "immediately" means that the day you find a condition requiring corrective action, you must take all reasonable steps to minimize or prevent the discharge of pollutants until you can implement a permanent solution. However, if you identify a problem too late in the work day to initiate corrective action, you must perform the corrective action the following work day morning. The term "all reasonable steps" means you must respond to the conditions triggering the corrective action, such as cleaning up any exposed materials that may be discharged in a storm event (e.g., through sweeping, vacuuming) or making arrangements (i.e., scheduling) for a new SCM to be installed.

5.1.3.2 **Subsequent Actions.** If additional actions are necessary beyond those implemented pursuant to Part 5.1.3.1, you must complete the corrective actions (e.g., install a new or modified control and make it operational, complete the repair) before the next storm event if possible, and within 14 calendar days from the time of discovery that the condition in Part 5.1.1 is not met. If it is infeasible to complete the corrective action within 14 calendar days, you must document why it is infeasible to complete the corrective action within the 14-day timeframe. You must also identify your schedule for completing the work, which must be done as soon as practicable after the 14-day timeframe but no longer than 45 days after discovery. If the completion of corrective action will exceed the 45-day timeframe, you may take the minimum additional time necessary to complete the corrective action, provided that you notify the appropriate EPA Regional Office of your intention to exceed 45 days, your rationale for an extension, and a completion date, which you must also include in your corrective action documentation (see Part 5.3). Where your corrective actions result in changes to any of the controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within 14 calendar days of completing corrective action work.

These time intervals are not grace periods, but are schedules considered reasonable for documenting your findings and for making repairs and improvements. They are

included in this permit to ensure that the conditions prompting the need for these repairs and improvements do not persist indefinitely.

5.1.4 **Effect of Corrective Action.** If the event triggering the review is a permit violation (e.g., non-compliance with an effluent limit), correcting it does not remove the original violation. Additionally, failing to take corrective action in accordance with this section is an additional permit violation. EPA may consider the appropriateness and promptness of corrective action in determining enforcement responses to permit violations.

5.1.5 **Substantially Identical Discharge Points.** If the event triggering corrective action is associated with a discharge point that had been identified as a "substantially identical discharge point" (SIDP) (see Parts 3.2.4.5 and 4.1.1), your review must assess the need for corrective action for all related SIDPs. Any necessary changes to control measures that affect these other discharge points must also be made before the next storm event if possible, or as soon as practicable following that storm event. Any corrective actions must be conducted within the timeframes set forth in Part 5.1.3.

5.2 Additional Implementation Measures (AIM)

If any of the following AIM triggering events in Parts 5.2.3, 5.2.4, or 5.2.5 occur, you must follow the response procedures described in those parts, called "additional implementation measures" or "AIM." There are three AIM levels: AIM Level 1, Level 2, and Level 3. You must respond as required to different AIM levels which prescribe sequential and increasingly robust responses when a benchmark exceedance occurs. You must follow the corresponding AIM level responses and deadlines described in Parts 5.2.1, 5.2.2, and 5.2.3 unless you qualify for an exception under Part 5.2.6.

5.2.1 Baseline Status

Once you receive discharge authorization under this permit per Part 1.3, you are in a baseline status for all applicable benchmark parameters. If an AIM triggering event occurs and you have proceeded sequentially to AIM Level 1, 2 or 3, you may return directly to baseline status once the corresponding AIM-level response and conditions are met.

5.2.2 **AIM Triggering Events.** If an annual average exceeds an applicable benchmark threshold based on the following events, the AIM requirements have been triggered for that benchmark parameter. You must follow the corresponding AIM-level responses and deadlines described in Parts 5.2.3, 5.2.4, and 5.2.5 unless you qualify for an exception under Part 5.2.6. An annual average exceedance for a parameter can occur if:

5.2.2.1 The four-quarterly annual average for a parameter exceeds the benchmark threshold, or

5.2.2.2 Fewer than four quarterly samples are collected, but a single sample or the sum of any sample results within the sampling year exceeds the benchmark threshold by more than four times for a parameter. This result indicates an exceedance is mathematically

certain (i.e., the sum of quarterly sample results to date is already more than four times the benchmark threshold).[18]

5.2.3 AIM Level 1

Your status changes from baseline to AIM Level 1 if quarterly benchmark monitoring results indicate that an AIM triggering event per Part 5.2.2 has occurred, unless you qualify for an exception under Part 5.2.6.

5.2.3.1 AIM Level 1 Responses. If any of the triggering events in Part 5.2.2 occur, you must:

a. Review SWPPP/Stormwater Control Measures. Immediately review your SWPPP and the selection, design, installation, and implementation of your stormwater control measures to ensure the effectiveness of your existing measures and determine if modifications are necessary to meet the benchmark threshold for the applicable parameter,[19] and

b. Implement Additional Measures. After reviewing your SWPPP/stormwater control measures, you must implement additional measures, considering good engineering practices, that would reasonably be expected to bring your exceedances below the parameter's benchmark threshold; or if you determine nothing further needs to be done with your stormwater control measures, you must document per Part 5.3 and include in your annual report why you expect your existing control measures to bring your exceedances below the parameter's benchmark threshold for the next 12-month period.

5.2.3.2 AIM Level 1 Deadlines. If any modifications to or additional control measures are necessary in response to AIM Level 1, you must implement those modifications or control measures within 14 days of receipt of laboratory results, unless doing so within 14 days is infeasible. If doing so within 14 days is infeasible, you must document per Part 5.3 why it is infeasible and implement such modifications within 45 days.

5.2.3.3 Continue Quarterly Benchmark Monitoring. After compliance with AIM Level 1 responses and deadlines, you must continue quarterly benchmark monitoring for the next four quarters for the parameter(s) that caused the AIM triggering event at all affected stormwater discharge points, beginning no later than the next full quarter after compliance.

5.2.3.4 AIM Level 1 Status Update. While in AIM Level 1 status, you may either:

a. Return to Baseline Status. Your AIM Level 1 status will return to baseline status if the AIM Level 1 responses have been met and continued quarterly benchmark monitoring results indicate that an AIM triggering event per Part 5.2.2 has not occurred after four quarters of monitoring (i.e., the benchmark threshold is no longer exceeded for the parameter(s)). You may discontinue benchmark monitoring for that parameter until monitoring resumes in year 4 of permit coverage per Part 4.2.2.3 or if you have fulfilled all benchmark monitoring

[18] For pH, an annual average exceedance can only occur if the four-quarter annual average exceeds the benchmark threshold.

[19] Examples may include: review sources of pollution, spill and leak procedures, and/or non-stormwater discharges; conducting a single comprehensive clean-up, making a change in subcontractor, implementing a new control measure, and/or increasing inspections.

requirements per Part 4.2.2.3, then you may discontinue monitoring for that parameter for the remainder of the permit.

b. Advance to AIM Level 2. Your AIM Level 1 status advances to AIM Level 2 status if you have completed AIM Level 1 responses and the continued quarterly benchmark monitoring results indicate that an AIM triggering event per Part 5.2.2 has occurred (i.e., the benchmark threshold continues to be exceeded for the same parameter(s)).

5.2.4 AIM Level 2

Your status changes from AIM Level 1 to AIM Level 2 if your continued quarterly benchmark monitoring results indicate that an AIM triggering event per Part 5.2.2 has occurred (i.e., the benchmark threshold continues to be exceeded for the parameter(s)), unless you qualify for an exception under Part 5.2.6.

5.2.4.1 AIM Level 2 Responses. If any of the events in Part 5.2.2 occur, you must review your SWPPP and implement additional pollution prevention/good housekeeping SCMs, considering good engineering practices, beyond what you did in your AIM Level 1 responses that would reasonably be expected to bring your exceedances below the parameter's benchmark threshold. Refer to the MSGP sector-specific fact sheets for recommended controls found at [https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-fact-sheets-and-guidance].

5.2.4.2 AIM Level 2 Deadlines. You must implement additional pollution prevention/good housekeeping SCMs within 14 days of receipt of laboratory results that indicate an AIM triggering event has occurred and document per Part 5.3 how the measures will achieve benchmark thresholds. If it is feasible for you to implement a measure, but not within 14 days, you may take up to 45 days to implement such measure. You must document per Part 5.3 why it was infeasible to implement such measure in 14 days. EPA may also grant you an extension beyond 45 days, based on an appropriate demonstration by you, the operator.

5.2.4.3 Continue Quarterly Benchmark Monitoring. After compliance with AIM Level 2 responses and deadlines, you must continue quarterly benchmark monitoring for the next four quarters for the parameter(s) that caused the AIM triggering event at all affected discharge points, beginning no later than the next full quarter after compliance.

5.2.4.4 AIM Level 2 Status Update. While in AIM Level 2 status, you may either:

a. Return to Baseline Status. Your AIM Level 2 status will return to baseline status if the AIM Level 2 responses have been met and the continued quarterly benchmark monitoring results indicate that an AIM triggering event per Part 5.2.2 has not occurred after four quarters of monitoring (i.e., the benchmark threshold is no longer exceeded for the parameter(s)). You may discontinue benchmark monitoring for that parameter until monitoring resumes in year 4 of permit coverage per Part 4.2.2.3, or if you have fulfilled all benchmark monitoring requirements per Part 4.2.2.3, then you may discontinue monitoring for that parameter for the remainder of the permit.

b. Advance to AIM Level 3. Your AIM Level 2 status advances to AIM Level 3 status if you have completed the AIM Level 2 responses and the continued quarterly benchmark monitoring results indicate that an AIM triggering event per Part 5.2.2

has occurred (i.e., the benchmark threshold continues to be exceeded for the same parameter(s)).

5.2.5 AIM Level 3

Your status changes from AIM Level 2 to AIM Level 3 if your continued quarterly benchmark monitoring results indicate that an AIM triggering event per Part 5.2.2 has occurred (i.e., the benchmark threshold continues to be exceeded for the parameter(s)), unless you qualify for an exception per Part 5.2.6.

5.2.5.1 AIM Level 3 Responses. if any of the triggering events in Part 5.2.2 occur, you must install structural source controls (e.g., permanent controls such as permanent cover, berms, and secondary containment), and/or treatment controls (e.g., sand filters, hydrodynamic separators, oil-water separators, retention ponds, and infiltration structures), except as provided in Part 5.2.6 (AIM Exceptions). The controls or treatment technologies or treatment train you install should be appropriate for the pollutants that triggered AIM Level 3 and should be more rigorous than the pollution prevention/good housekeeping-type stormwater control measures implemented under AIM Tier 2 in Part 5.2.4. You must select controls with pollutant removal efficiencies that are sufficient to bring your exceedances below the benchmark threshold. You must install such stormwater control measures for the discharge point(s) in question and for substantially identical discharge points (SIDPs), unless you individually monitor those SIDPs and demonstrate that AIM Level 3 requirements are not triggered at those discharge points.

5.2.5.2 AIM Level 3 Deadlines. You must identify the schedule for installing the appropriate structural source and/or treatment stormwater control measures within 14 days and install such measures within 60 days. If is not feasible within 60 days, you may take up to 90 days to install such measures, documenting in your SWPPP per Part 5.3 why it is infeasible to install the measure within 60 days. EPA may also grant you an extension beyond 90 days, based on an appropriate demonstration by you, the operator.

5.2.5.3 Continue Quarterly Benchmark Monitoring. After compliance with AIM Level 3 responses and deadlines, you must continue quarterly benchmark monitoring for the next four quarters for the parameter(s) that caused the AIM triggering event at all affected discharge points, beginning no later than the next full quarter after compliance.

5.2.5.4 AIM Level 3 Status Update. While in AIM Level 3 status, you may either:

a. Return to Baseline Status. Your AIM Level 3 status will return to baseline status if the AIM Level 3 response(s) have been met and the continued quarterly benchmark monitoring results indicate that an AIM triggering event per Part 5.2.2 has not occurred after four quarters of monitoring (i.e., the benchmark threshold is no longer exceeded for the parameter(s)). You may discontinue benchmark monitoring for that parameter until monitoring resumes in what would be year 4 of permit coverage per Part 4.2.2.3, or if you have fulfilled all benchmark monitoring requirements per Part 4.2.2.3, then you may discontinue monitoring for that parameter for the remainder of the permit.

b. Continue in AIM Level 3. Your AIM Level 3 status will remain at Level 3 if you have completed the AIM Level 3 responses and the continued quarterly benchmark monitoring results indicate that an AIM triggering event per Part 5.2.2 has occurred (i.e., the benchmark threshold continues to be exceeded for the same parameter(s)). You must continue quarterly benchmark monitoring for the next

four quarters for the parameter(s) that caused the AIM triggering event at all affected discharge points, beginning no later than the next full quarter after compliance. If you continue to exceed the benchmark threshold for the same parameter even after compliance with AIM Level 3, EPA may require you to apply for an individual permit.

5.2.6 AIM Exceptions

Following the occurrence of an AIM triggering event per Part 5.2.2, at any point or tier level of AIM and following four quarters of benchmark monitoring (or sooner if the exceedance is triggered by less than four quarters of data), you may qualify for an exception below from AIM requirements and continued benchmark monitoring. Regardless if you qualify for and claim an exception, you must still review your SCMs, SWPPP, and other on-site activities to determine if actions or modifications are necessary or appropriate in light of your benchmark exceedance(s). If claiming an AIM exception, you must follow the requirements to demonstrate that you qualify for the exception as provided below. If you qualify for an exception, you are not required to comply with the AIM responses or the continuation of quarterly benchmark monitoring for any parameters for which you can demonstrate that the benchmark exceedance is:

5.2.6.1 **Solely Attributable to Natural Background Pollutant Levels:** You must demonstrate that the benchmark exceedance is solely attributable to the presence of that pollutant in natural background sources, provided that all the following conditions are met and you submit your analysis and documentation to the applicable EPA Regional Office upon request:

- **a.** The four-quarter average concentration of your benchmark monitoring results (or fewer than four-quarters of data that trigger an exceedance) is less than or equal to the concentration of that pollutant in the natural background; and
- **b.** You document and maintain with your SWPPP, as required in Part 6.5.9, your supporting rationale for concluding that benchmark exceedances are in fact attributable solely to natural background pollutant levels. You must include in your supporting rationale any data previously collected by you or others (including literature studies) that describe the levels of natural background pollutants in your stormwater discharge. Natural background pollutants are those substances that are naturally occurring in soils or ground water. Natural background pollutants do not include legacy pollutants from earlier activity on your site, or pollutants in run-on from neighboring sources which are not naturally occurring, such as other industrial facilities or roadways.

5.2.6.2 **Due to Run-On:** You must demonstrate and obtain EPA agreement that run-on from a neighboring source (e.g., a source external to your facility) is the cause of the exceedance, provided that all the following conditions are met and you submit your analysis and documentation to the applicable EPA Regional Office for concurrence:

- **a.** After reviewing and revising your SWPPP, as appropriate, you should notify the other facility or entity contributing run-on to your discharges and request that they abate their pollutant contribution.
- **b.** If the other facility or entity fails to take action to address their discharges or sources of pollutants, you should contact your applicable EPA Regional Office.

5.2.6.3 **Due to an abnormal event:** You must immediately document per Part 5.3 that the AIM triggering event was abnormal, a description explaining what caused the abnormal event, and how any measures taken within 14 days of such event will prevent a reoccurrence of the exceedance. You must also collect a sample during the next measurable storm event to demonstrate that the result is less than the benchmark threshold, in which case you do not trigger any AIM requirements based on the abnormal event. You must report the result of this sample in NeT-DMR in lieu of the result from the sample that caused the AIM triggering event. You may avail yourself of the "abnormal" demonstration opportunity at any AIM Level, one time per parameter, and one time per discharge point, which shall include substantially identical discharge points (SIDP), provided you qualify for the exception.

5.2.6.4 **For Aluminum and Copper benchmark parameters only: Demonstrated to not result in an exceedance of your facility-specific value using the national recommended water quality criteria in-lieu of the applicable MSGP benchmark threshold:**

To be eligible for the exception, you must demonstrate to EPA that your stormwater discharge(s) that exceeded the applicable nationally representative MSGP benchmark threshold would not result in an exceedance of a derived facility-specific value. The demonstration to EPA, which will be made publicly available, must meet the minimum elements below in order to be considered for and approved by the applicable EPA Regional Office. If you exceed the MSGP benchmark threshold for aluminum or copper, you must still comply with any applicable AIM requirements and additional benchmark monitoring until the demonstration is made to and approved by the applicable EPA Regional Office. In this case, EPA suggests that samples collected for any continued benchmark monitoring also be analyzed for the required input parameters for each model for efficiency. If you are an existing operator and you anticipate an exceedance of the MSGP benchmark(s) based on previous monitoring data and expect to utilize this exception(s), EPA recommends you begin the required data collection in your first year of permit coverage.

a. **Aluminum:**

i. Conditions for this exception are:

1) Use of EPA's 2018 National Recommended Aluminum Aquatic Life Criteria: https://www.epa.gov/wqc/aquatic-life-criteria-aluminum;

2) In-stream waterbody sampling for the three water quality input parameters for the recommended criteria model: pH, total hardness, and dissolved organic carbon (DOC); and

3) Completion of sampling events sufficient to capture spatial and temporal variability. Sampling events must adequately represent each applicable season at the facility's location, which would likely be over the course of at least one year. An equal number of ambient waterbody samples must be collected at a single upstream and downstream location from the operator's discharge point(s) to the receiving water of the United States. Where there exists no ambient source water upstream of the operator's discharge point(s) to the receiving water of the United States, samples of the ambient downstream waterbody conditions are sufficient.

ii. The demonstration provided to EPA must include, at minimum:

1) A description of the sampling, analysis, and quality assurance procedures that were followed for data collection, following the guidance in Section

3 of EPA's Industrial Stormwater Monitoring and Sampling Guide. https://www.epa.gov/sites/production/files/2015-11/documents/msgp_monitoring_guide.pdf;

2) The input parameters and export of results from the Aluminum Criteria Calculator, available at: https://www.epa.gov/sites/production/files/2018-12/aluminum-criteria-calculator-v20.xlsm; and,

3) A narrative summary of results.

b. Copper (only for discharges to freshwater):

i. Conditions for this exception are:

1) Use of EPA's 2007 National Recommended Freshwater Copper Aquatic Life Criteria: https://www.epa.gov/wqc/aquatic-life-criteria-copper;

2) In-stream waterbody sampling for the 10 water quality input parameters to the BLM for copper: pH; dissolved organic carbon (DOC); alkalinity; temperature; major cations (calcium, magnesium, sodium, and potassium); and major anions (sulfate, chloride);

3) The water quality input parameters, with the exception of temperature, must fall within the range of conditions recommended for use in the BLM, found in Table 1-1 of the Data Requirements document: https://www.epa.gov/sites/production/files/2015-11/documents/copper-data-requirements-training.pdf; and

4) Completion of sampling events sufficient to capture spatial and temporal variability. Because some of the BLM input parameters are known to vary seasonally, EPA suggests a possible starting point of at least one sampling event per season.[20] Sampling events must adequately represent each applicable season at the facility's location, which would likely be over the course of at least one year. An equal number of ambient waterbody samples must be collected at a single upstream and downstream location from the operator's discharge point(s) to the receiving water of the United States. Where there exists no ambient source water upstream of the operator's discharge point(s) to the receiving water of the United States, samples of the ambient downstream waterbody conditions are sufficient.

ii. The demonstration provided to EPA must include, at minimum:

1) A description of the sampling, analysis, and quality assurance procedures that were followed for data collection, following the guidance in Section 3 of EPA's Industrial Stormwater Monitoring and Sampling Guide.

[20] EPA training materials on Copper BLM for Data Requirements states that spatial variability in the BLM input parameters caused by physical factors such as watershed size or the presence or absence of a point source discharge(s) to a waterbody should also be considered when determining how many sampling events should be collected when using the BLM to develop site-specific copper criteria. Spatial variability in the BLM input parameters should also be considered when determining how many sampling locations should be selected for development of site-specific copper criteria using the BLM. Regardless of the number of sampling events involved, data collection should reflect site-specific characteristics and consider special circumstances that may affect copper toxicity throughout the expected range of receiving water conditions. See https://www.epa.gov/sites/production/files/2015-11/documents/copper-data-requirements-training.pdf.

https://www.epa.gov/sites/production/files/2015-11/documents/msgp_monitoring_guide.pdf;

2) A discussion of how the data collected reflects the site-specific characteristics and how the operator considered special circumstances that may affect copper toxicity throughout the expected range of receiving water conditions;

3) The input file and export of the results from the BLM software, which can be requested at: https://www.epa.gov/wqs-tech/copper-biotic-ligand-model; and

4) A narrative summary of results.

5.2.6.5 Demonstrated to not result in any exceedance of water quality standards: You must demonstrate to EPA within 30 days of the AIM triggering event that the triggering event does not result in any exceedance of water quality standards. If it is not feasible to complete this demonstration within 30 days, you may take up to 90 days, documenting in your SWPPP why it is infeasible to complete the demonstration within 30 days. EPA may also grant you an extension beyond 90 days, based on an appropriate demonstration by you, the operator. The demonstration to EPA, which will be made publicly available, must include the following minimum elements in order to be considered for approval by the EPA Regional Office:

a. the water quality standards applicable to the receiving water;

b. the average flow rate of the stormwater discharge;

c. the average instream flow rates of the receiving water immediately upstream and downstream of the discharge point;

d. the ambient concentration of the parameter(s) of concern in the receiving water immediately upstream and downstream of the discharge point demonstrated by full-storm composite sampling;

e. the concentration of the parameter(s) of concern in the stormwater discharge demonstrated by full-storm, flow-weighted composite sampling;

f. any relevant dilution factors applicable to the discharge; and

g. the hardness of the receiving water.

Timeframe of EPA Review of Your Submitted Demonstration: EPA will review and either approve or disapprove of such demonstration within 90 days of receipt (EPA may take up to 180 days upon notice to you before the 90th day that EPA needs additional time).

- **EPA Approval of Your Submitted Demonstration**. If EPA approves such demonstration within this timeframe, you have met the requirements for this exception, and you do not have to comply with the corresponding AIM requirements and continued benchmark monitoring.
- **EPA Disapproval of Your Submitted Demonstration.** If EPA disapproves such demonstration within this timeframe, you must comply with the corresponding AIM requirements and continued benchmark monitoring, as required. Compliance with the AIM requirements would begin from the date EPA notifies you of the disapproval unless you submit a Notice of Dispute to the applicable EPA Regional Office in Part 7 within 30 days of EPA's disapproval.

- **EPA Does Not Provide Response Related to Your Submitted Demonstration**. If EPA does not provide a response on the demonstration within this timeframe, you may submit to the EPA Regional Office in Part 7 a Notice of Dispute.
- **Operator Submittal of Notice of Dispute.** You may submit all relevant materials, including support for your demonstration and all notices and responses to the Water Division Director for the applicable EPA Region to review within 30 days of EPA's disapproval or after 90 days (or 180 days if EPA has provided notice that it needs more time) of not receiving a response from EPA.
- **EPA Review of Notice of Dispute.** EPA will send you a response within 30 days of receipt of the Notice of Dispute. Time for action by you, the operator, upon disapproval shall be tolled during the period from filing of the Notice of Dispute until the decision on the Notice of Dispute is issued by the Water Division Director for the applicable EPA Region.

5.3 Corrective Action and AIM Documentation

5.3.1 **Documentation within 24 Hours.** You must document the existence of any of the conditions listed in Parts 5.1.1, 5.2.3, 5.2.4, or 5.2.5 within 24 hours of becoming aware of such condition. You are not required to submit this documentation to EPA, unless specifically required or requested to do so. However, you must summarize your findings in the annual report per Part 7.4. Include the following information in your documentation:

5.3.2 Description of the condition or event triggering the need for corrective action review and/or AIM response. For any spills or leaks, include the following information: a description ofthe incident including material, date/time, amount, location, and reason for spill, and any leaks, spills or other releases that resulted in discharges of pollutants to waters of United States, through stormwater or otherwise;

5.3.2.1 Date the condition/triggering event was identified;

5.3.2.2 Description of immediate actions taken pursuant to Part 5.1.3.1 to minimize or prevent the discharge of pollutants. For any spills or leaks, include response actions, the date/time clean-up completed, notifications made, and staff involved. Also include any measures taken to prevent the reoccurrence ofsuch releases (see Part 2.1.2.4); and

5.3.2.3 A statement, signed and certified in accordance with Appendix B, Subsection 11.

5.3.3 **Documentation within 14 Days.** You must also document the corrective actions and/or AIM responses you took or will take as a result of the conditions listed in Part 5.1.1, 5.2.3, 5.2.4, and/or 5.2.5 within 14 days from the time of discovery of any of those conditions/triggering events. Provide the dates when you initiated and completed (or expect to complete) each corrective action and/or AIM response. If infeasible to complete the necessary corrective actions and/or AIM responses within the specified timeframe, per Parts 5.1.1, 5.2.3, 5.2.4, or 5.2.5, you must document your rationale and schedule for installing the controls and making them operational as soon as practicable after the specified timeframe. If you notified EPA regarding an allowed extension of the specified timeframe, you must document your rationale for an extension. Include any additional information and/or rationale that is required and/or applicable to the specified corrective action and/or AIM response in Part 5. You are not required to submit this documentation to EPA, unless specifically required or

requested to do so. However, you must summarize your corrective actions and/or AIM responses in the Annual Report per Part 7.4.

6. Stormwater Pollution Prevention Plan (SWPPP)

You must prepare a SWPPP for your facility before submitting your NOI for permit coverage. If you prepared a SWPPP for coverage under a previous version of this permit, you must review and update the SWPPP to implement all provisions of this permit prior to submitting your NOI. The SWPPP does not contain effluent limitations; such limitations are contained in Parts 2, 8, and 9 of the permit. The SWPPP is intended to document the selection, design, and installation of stormwater control measures to meet the permit's effluent limits. The SWPPP is a living document. Facilities must keep their SWPPP up-to-date throughout their permit coverage, such as making revisions and improvements to their stormwater management program based on new information and experiences with major storm events. As distinct from the SWPPP, the additional documentation requirements (see Part 6.5) are so that you document the implementation (including inspection, maintenance, monitoring, and corrective action) of the permit requirements.

Note: Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the SWPPP, during an inspection, etc.

6.1 Person(s) Responsible for Preparing the SWPPP

You shall prepare the SWPPP in accordance with good engineering practices and to industry standards. The SWPPP may be developed by either a person on your staff or a third party you hire, but it must be developed by a "qualified person" and must be certified per the signature requirements in Part 6.2.7. If EPA concludes that the SWPPP is not in compliance with Part 6.2 of this permit, EPA may require the SWPPP to be reviewed, amended as necessary, and certified by a Professional Engineer, or for Sector G, H or J, by a Professional Geologist, with the education and experience necessary to prepare an adequate SWPPP.

Note: A "qualified person," as defined in Appendix A, is a person knowledgeable in the principles and practices of industrial stormwater controls and pollution prevention, and possesses the education and ability to assess conditions at the industrial facility that could impact stormwater quality, and the education and ability to assess the effectiveness of stormwater controls selected and installed to meet the requirements of the permit.

6.2 Required Contents of Your SWPPP

To be covered under this permit, your SWPPP must contain all of the following elements:

- Stormwater pollution prevention team (Part 6.2.1);
- Site description (Part 6.2.2);
- Summary of potential pollutant sources (Part 6.2.3);
- Description of stormwater control measures (Part 6.2.4);
- Schedules and procedures (Part 6.2.5);
- Documentation to support eligibility pertaining to other federal laws (Part 6.2.6); and

- Signature requirements (Part 6.2.7).

Where your SWPPP refers to procedures in other facility documents, such as a Spill Prevention, Control and Countermeasure (SPCC) Plan or an Environmental Management System (EMS), copies of the relevant portions of those documents must be kept with your SWPPP.

6.2.1 **Stormwater Pollution Prevention Team.** You must identify the staff members (by name or title) that comprise the facility's stormwater pollution prevention team as well as their individual responsibilities. Your stormwater pollution prevention team is responsible for overseeing development of the SWPPP, any modifications to it, and for implementing and maintaining control measures and taking corrective actions and/or AIM responses, when required. Each member of the stormwater pollution prevention team must have ready access to either an electronic or paper copy of applicable portions of this permit, the most updated copy of your SWPPP, and other relevant documents or information that must be kept with the SWPPP.

6.2.2 **Site Description.** Your SWPPP must include the following:

6.2.2.1 **Activities at the facility.** Provide a description of the nature of the industrial activities at your facility.

6.2.2.2 **General location map.** Provide a general location map (e.g., U.S. Geological Survey (USGS) quadrangle map) with enough detail to identify the location of your facility and all receiving waters for your stormwater discharges.

6.2.2.3 **Site map.** Provide a map showing:

a. Boundaries of the property and the size of the property in acres;

b. Location and extent of significant structures and impervious surfaces;

c. Directions of stormwater flow (use arrows), including flows with a significant potential to cause soil erosion;

d. Locations of all stormwater control measures;

e. Locations of all receiving waters, including wetlands, in the immediate vicinity of your facility. Indicate which waterbodies are listed as impaired and which are identified by your state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 waters;

f. Locations of all stormwater conveyances including ditches, pipes, and swales;

g. Locations of potential pollutant sources identified under Part 6.2.3.2;

h. Locations where significant spills or leaks identified under Part 6.2.3.3 have occurred;

i. Locations of all stormwater monitoring points;

j. Locations of stormwater inlets and discharge points, with a unique identification code for each discharge point (e.g., 001, 002), indicating if you are treating one or more discharge points as "substantially identical" under Parts 3.2.4.5, 6.2.5.3, and 4.1.1, and an approximate outline of the areas draining to each discharge point;

k. If applicable, municipal separate storm sewer systems (MS4s) and where your stormwater discharges to them;

l. Areas of Endangered Species Act-designated critical habitat for endangered or threatened species, if applicable.

m. Locations of the following activities where such activities are exposed to precipitation:

ii. fueling stations;

iii. vehicle and equipment maintenance and/or cleaning areas;

iv. loading/unloading areas;

v. locations used for the treatment, storage, or disposal of wastes;

vi. liquid storage tanks;

vii. processing and storage areas;

viii. immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility;

ix. transfer areas for substances in bulk;

x. machinery;

xi. locations and sources of run-on to your site from adjacent property that contains significant quantities of pollutants.

6.2.3 **Summary of Potential Pollutant Sources.** You must describe in the SWPPP areas at your facility where industrial materials or activities are exposed to stormwater or from which authorized non-stormwater discharges originate. Industrial materials or activities include but are not limited to: material handling equipment or activities; industrial machinery; raw materials; industrial production and processes; and intermediate products, by-products, final products, and waste products. Material handling activities include, but are not limited to: the storage, loading and unloading, transportation, disposal, or conveyance of any raw material, intermediate product, final product or waste product. For structures located in areas of industrial activity, you must be aware that the structures themselves are potential sources of pollutants. This could occur, for example, when metals such as aluminum or copper are leached from the structures as a result of acid rain.

For each area identified, the description must include:

6.2.3.1 **Activities in the Area.** A list of the industrial activities exposed to stormwater (e.g., material storage; equipment fueling, maintenance, and cleaning; cutting steel beams).

6.2.3.2 **Pollutants.** A list of the pollutant(s) or pollutant constituents (e.g., crankcase oil, zinc, sulfuric acid, cleaning solvents) associated with each identified activity, which could be exposed to rainfall or snowmelt and could be discharged from your facility. The pollutant list must include all significant materials that have been handled, treated, stored or disposed, and that have been exposed to stormwater in the three years prior to the date you prepare or amend your SWPPP.

6.2.3.3 **Spills and Leaks.** You must document where potential spills and leaks could occur that could contribute pollutants to stormwater discharges, and the corresponding discharge point(s) that would be affected by such spills and leaks. You must document all significant spills and leaks of oil or toxic or hazardous substances that actually occurred at exposed areas, or that drained to a stormwater conveyance, in the three years prior to the date you prepare or amend your SWPPP.

Note: Significant spills and leaks include, but are not limited to, releases of oil or hazardous substances in excess of quantities that are reportable under CWA section 311 (see 40 CFR 110.6 and 40 CFR 117.21) or section 102 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC § 9602. This permit does not relieve you of the reporting requirements of 40 CFR 110, 40 CFR 117, and 40 CFR 302 relating to spills or other releases of oils or hazardous substances.

6.2.3.4 **Unauthorized Non-Stormwater Discharges Evaluation.** By the end of the first year of your permit coverage under this permit, you must inspect and document all discharge points at your facility as part of the SWPPP. If it is infeasible to complete the evaluation within the first year of permit coverage, you must document in your SWPPP why this is the case and identify the schedule by which you expect to complete the evaluation. Documentation of your evaluation must include:

a. The date of the evaluation;

b. A description of the evaluation criteria used;

c. A list of the discharge points or onsite drainage points that were directly observed during the evaluation; and

d. If there are any unauthorized non-stormwater discharges (see Part 1.2.2 for the exclusive list of authorized non-stormwater discharges under this permit) you must immediately take action(s), such as implementing control measures, to eliminate those discharges or seek an individual NPDES wastewater permit and document that you obtained the permit (for example, a floor drain was sealed, a sink drain was re-routed to sanitary, or an NPDES permit application was submitted for an unauthorized cooling water discharge).

e. An explanation of everything you did to immediately eliminate the unauthorized discharge per Part 5 Corrective Actions.

6.2.3.5 **Salt Storage.** You must document the location of any storage piles containing salt used for deicing or other commercial or industrial purposes.

6.2.3.6 **Sampling Data.** Existing permitted facilities must summarize all stormwater discharge sampling data collected at the facility during the previous permit term. The summary shall include a narrative description (and may include data tables/figures) that adequately summarizes the collected sampling data tosupport identification of potential pollution sources at your facility. New dischargers and new sources must provide a summary of any available stormwater data they may have.

6.2.4 **Description of Stormwater Control Measures to Meet Technology-Based and Water Quality-Based Effluent Limits.** You must document the location and type of stormwater control measures you have specifically chosen and/or designed to comply with:

6.2.4.1 Part 2.1.2: Non-numeric technology-based effluent limits;

6.2.4.2 Parts 2.1.3 and 8: Applicable numeric effluent limitations guidelines-based limits;

6.2.4.3 Part 2.2: Water quality-based effluent limits;

6.2.4.4 Part 2.3: Any additional measures that formed the basis of eligibility regarding Endangered Species Act-listed threatened and endangered species or their critical habitat, National Historic Preservation Act historic properties, and/orfederal CERCLA Site requirements;

6.2.4.5 Parts 8 and 9: Applicable effluent limits;

6.2.4.6 Regarding your control measures, you must also document, as appropriate:

a. How you addressed the selection and design considerations in Part 2.1.1;

b. How they address the pollutant sources identified in Part 6.2.3.

Effluent limit requirements in Part 2.1.2 that do not involve the site-specific selection of a stormwater control measure or are specific activity requirements (e.g., "cleaning catch basins when the depth of debris reaches two-thirds (2/3) of the sump depth, or in line with manufacturer specifications, whichever is lower, and keeping the debris surface at least six inches below the lowest outlet pipe") are marked with an asterisk (*). For the requirements marked with an asterisk, you may include extra information, or you may just "copy-and-paste" these effluent limits word-for-word into your SWPPP without providing additional documentation.

6.2.5 Schedules and Procedures

6.2.5.1 **Pertaining to Stormwater Control Measures Used to Comply with the Effluent Limits in Part 2**. You must document the following in your SWPPP:

a. **Good Housekeeping (see Part 2.1.2.2)** – A schedule or the convention used for determining when pickup and disposal of waste materials occurs. Also provide a schedule for routine inspections for leaks and conditions of drums, tanks and containers.

b. **Maintenance (see Part 2.1.2.3)** – Preventative maintenance procedures, including regular inspections, testing, maintenance and repair of all stormwater control measures to avoid situations that may result in leaks, spills, and other releases, and any back-up practices in place should a storm event resulting in a stormwater discharge occur while a control measure is off-line. The SWPPP shall include the schedule or frequency for maintaining all control measures used to comply with the effluent limits in Part 2;

c. **Spill Prevention and Response Procedures (see Part 2.1.2.4**) – Procedures for preventing and responding to spills and leaks, including notification procedures. For preventing spills, include in your SWPPP the stormwater control measures for material handling and storage, and the procedures for preventing spills that can contaminate stormwater. Also specify cleanup equipment, procedures and spill logs, as appropriate, in the event of spills. You may reference the existence of other plans for Spill Prevention, Control and Countermeasure (SPCC) developed for the facility under section 311 of the CWA or BMP programs otherwise required by an NPDES permit for the facility, provided that you keep a copy of that other plan onsite and make it available for review consistent with Part 6.4;

d. **Erosion and Sediment Controls (see Part 2.1.2.5)** – If you use polymers and/or other chemical treatments as part of your erosion and sediment controls, you must identify the polymers and/or chemicals used and the purpose;

e. **Employee Training (see Part 2.1.2.8)** – The elements of your employee training plan shall include all, but not necessarily limited to, the requirements set forth in Part 2.1.2.8, and also the following:

ii. The content of the training;

iii. The frequency/schedule of training for employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit;

iv. A log of the dates on which specific employees received training.

6.2.5.2 **Pertaining to Inspections and Assessments.** You must document in your SWPPP your procedures for performing, as appropriate, the types of inspections specified by this permit, including:

a. Routine facility inspections (see Part 3.1) and;

b. Quarterly visual assessment of stormwater discharges (see Part 3.2).

For each type of inspection performed, your SWPPP must identify:

a. Person(s) or positions of person(s) responsible for the inspection;

b. Schedules for conducting inspections, including tentative schedule for facilities in climates with irregular stormwater discharges (see Part 3.2.4);

c. Specific items to be covered by the inspection, including schedules for specific discharge points.

If you are invoking the exception for inactive and unstaffed facilities relating to routine facility inspections and quarterly visual assessments, you must include in your SWPPP the information to support this claim as required by Parts 3.1.5 and 3.2.4.

6.2.5.3 **Pertaining to Monitoring**

a. **Procedures for Each Type of Monitoring.** You must document in your SWPPP procedures for conducting the six types of analytical stormwater discharge monitoring specified by this permit, where applicable to your facility, including:

i. Indicator monitoring (Part 4.2.1);

ii. Benchmark monitoring (Part 4.2.2);

iii. Effluent limitations guidelines monitoring (Part 4.2.3);

iv. State- or tribal-specific monitoring (Part 4.2.4);

v. Impaired waters monitoring (Part 4.2.5);

vi. Other monitoring as required by EPA (Part 4.2.6).

b. **Documentation for Each Type of Monitoring.** For each type of stormwater discharge monitoring, you must document in your SWPPP:

i. Locations where samples are collected, including any determination that two or more discharge points are substantially identical;

ii. Parameters for sampling and the frequency of sampling for each parameter;

iii. Schedules for monitoring at your facility, including schedule for alternate monitoring periods for climates with irregular stormwater discharges (see Part 4.1.6);

iv. Any numeric control values (benchmark thresholds, effluent limitations guidelines, TMDL-related requirements, or other requirements) applicable to stormwater discharges from each discharge point;

v. Procedures (e.g., responsible staff, logistics, laboratory to be used) for gathering storm event data, as specified in Part 4.1.

c. Exception for Inactive and Unstaffed Facilities. If you are invoking the exception for inactive and unstaffed facilities for indicator monitoring, benchmark monitoring or impaired waters monitoring, you must include in your SWPPP the information to support this claim as required by Part 4.2.2.5 and 4.2.5.2.

d. Exception for Substantially Identical Discharge Points (SIDP). You must document the following in your SWPPP if you plan to use the SIDP exception for your quarterly visual assessment requirements in Part 3.2.4 or your indicator, benchmark, or impaired waters monitoring requirements in Parts 4.2.1, 4.2.2, and 4.2.5, respectively (see also Part 4.1.1):

i. Location of each SIDP;

ii. Description of the general industrial activities conducted in the drainage area of each discharge point;

iii. Description of the control measures implemented in the drainage area of each discharge point;

iv. Description of the exposed materials located in the drainage area of each discharge point that are likely to be significant contributors of pollutants via stormwater discharges;

v. An estimate of the runoff coefficient of the drainage areas (low = under 40%; medium = 40 to 65%; high = above 65%);

vi. Why the discharge points are expected to discharge substantially identical effluents.

6.2.6 Documentation to Support Eligibility Pertaining to Other Federal Laws

6.2.6.1 Documentation Regarding Endangered Species Act-Listed Threatened and Endangered Species and Critical Habitat Protection. You must keep with your SWPPP the documentation supporting your determination with regard to Part 1.1.4.

6.2.6.2 Documentation Regarding National Historic Preservation Act Historic Properties. You must keep with your SWPPP the documentation supporting your determination with regard to Part 1.1.5.

6.2.7 Signature Requirements. You must sign and date your SWPPP in accordance with Appendix B, Subsection 11.

6.3 Required SWPPP Modifications

You must modify your SWPPP based on any corrective actions and deadlines required under Part 5. You must sign and date any SWPPP modifications in accordance with Appendix B, Subsection 11.

6.4 SWPPP Availability

You must retain a complete copy of your current SWPPP required by this permit at the facility in any accessible format. A complete SWPPP includes any documents incorporated by reference and all documentation supporting your permit eligibility pursuant to Part 1.1 of this permit, as well as your signed and dated certification page. Regardless of the format, the SWPPP must be immediately available to facility employees, EPA, a state or tribe, the operator of an MS4 into which you discharge, and representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) at the time of an on-site inspection.

Your current SWPPP or certain information from your current SWPPP described below must also be made available to the public (except any confidential business information (CBI) or restricted information [as defined in Appendix A]), but you must clearly identify those portions of the SWPPP that are being withheld from public access; to do so, you must comply with one of the following two options:

6.4.1 Making Your SWPPP Publicly Available

You have three options to comply with the public availability requirements for the SWPPP: attaching your SWPPP to your NOI; providing a URL of your SWPPP in your NOI; or providing SWPPP information in your NOI. To remain current for all three options, you must update your SWPPP (by updating the attachment per Part 6.4.1.1 via a Change NOI, updating your webpage per Part 6.4.1.2, or updating the SWPPP information in the NOI per Part 6.4.1.3 via a Change NOI no later than 45 days after conducting the final routine facility inspection for the year required in Part 3.1. You may switch your preferred option throughout your permit coverage, but you must update your NOI as necessary to indicate your change in option. You are not required to post any CBI or restricted information (as defined in Appendix A) (such information may be redacted), but you must clearly identify those portions of the SWPPP that are being withheld from public access. CBI may not be withheld from those staff cleared for CBI review within EPA, USFWS or NMFS.

6.4.1.1 Attaching Your SWPPP to your NOI: You may attach a copy of your SWPP, and any SWPPP modifications, records, and other reporting elements that must be kept with your SWPPP, to your NOI in NeT-MSGP.

6.4.1.2 Providing a URL of your SWPPP in your NOI: You may provide a URL in your NOI in NeT-MSGP where your SWPPP can be found, and maintain your current SWPPP at this URL. You must post any SWPPP modifications, records, and other reporting elements that must be kept with your SWPPP required for the previous year at the same URL as the main body of the SWPPP.

6.4.1.3 Providing SWPPP Information in your NOI. You may include the following information in your NOI in NeT-MSGP. Irrespective of this requirement, EPA may provide access to portions of your SWPPP to a member of the public upon request (except any CBI or restricted information (as defined in Appendix A)).

a. Onsite industrial activities exposed to stormwater, including potential spill and leak areas (see Parts 6.2.3.1, 6.2.3.3 and 6.2.3.5);

b. Pollutants or pollutant constituents associated with each industrial activity exposed to stormwater that could be discharged in stormwater and/or any authorized non-stormwater discharges listed in Part 1.2.2 (see Part 6.2.3.2);

c. Stormwater control measures you employ to comply with the non-numeric technology-based effluent limits required in Part 2.1.2 and Part 8, and any other measures taken to comply with the requirements in Part 2.2 Water Quality-Based Effluent Limitations (see Part 6.2.4). If you use polymers and/or other chemical treatments as part of your erosion and sediment controls, you must identify the polymers and/or chemicals used and the purpose; and

d. Schedule for good housekeeping and maintenance (see Part 6.2.5.1) and schedule for all inspections required in Part 3 (see Part 6.2.5.2).

6.5 Additional Documentation Requirements

You are required to keep the following inspection, monitoring, and certification records with your SWPPP that together keep your records complete and up-to-date, and demonstrate your full compliance with the conditions of this permit:

6.5.1 A copy of the NOI submitted to EPA along with any correspondence exchanged between you and EPA specific to coverage under this permit;

6.5.2 A copy of the authorization email you receive from the EPA assigning your NPDES ID;

6.5.3 A copy of this permit (either a hard copy or an electronic copy easily available to SWPPP personnel);

6.5.4 Documentation of any maintenance and repairs of stormwater control measures, including the date(s) of regular maintenance, date(s) of discovery of areas in need of repair/replacement, and for repairs, date(s) that the control measure(s) returned to full function, and the justification for any extended maintenance/repair schedules (see Part 2.1.2.3);

6.5.5 All inspection reports, including the Routine Facility Inspection Reports (see Part 3.1.6) and Visual Assessment Documentation (see Part 3.2.3);

6.5.6 Description of any deviations from the schedule for visual assessments and/or monitoring, and the reason for the deviations (e.g., adverse weather or it was impracticable to collect samples within the first 30 minutes of a measurable storm event) (see Parts 3.2.4 and 4.1.5);

6.5.7 Corrective action documentation required per Part 5.1;

6.5.8 Documentation of any benchmark threshold exceedances, which AIM Level triggering event the exceedance caused, and AIM response you employed per Part 5.2, including:

6.5.8.1 The AIM triggering event;

6.5.8.2 The AIM response taken;

6.5.8.3 Any rationale that SWPPP/SCM changes were unnecessary;

6.5.8.4 Any documentation required to meet any AIM exception per Part 5.2.6.

6.5.9 Documentation to support any determination that pollutants of concern are not expected to be present above natural background levels if you discharge directly to impaired waters, and that such pollutants were not detected in your discharge after three years or were solely attributable to natural background sources (see Part 4.2.5.1); and

6.5.10 Documentation to support your claim that your facility has changed its status from active to inactive and unstaffed with respect to the requirements to conduct routine facility inspections (see Part 3.1.5), quarterly visual assessments (see Part 3.2.4.4), benchmark monitoring (see Part 4.2.2.4), and/or impaired waters monitoring (see Part 4.2.5.2).

7. Reporting and Recordkeeping

7.1 Electronic Reporting Requirement

You must submit all NOIs, NOTs, NECs, Annual Reports, Discharge Monitoring Reports (DMRs), and other reporting information as appropriate electronically, unless the EPA Regional Office grants you a waiver based on one of the following conditions:

- If your headquarters is physically located in a geographic area (i.e., zip code or census tract) that is identified as under-served for broadband Internet access in the most recent report from the Federal Communications Commission; or
- If you have limitations regarding available computer access or computer capability.

Waivers are only granted for a one-time use for a single information submittal, e.g., an initial waiver for an NOI does not apply for the entire term of the permit for other forms. If you need to submit information on paper after your first waiver, you must apply for a new waiver. The EPA Regional Office may extend a wavier on a case-by-case basis.

If you wish to obtain a waiver from submitting a report electronically, you must submit a request to the applicable EPA Regional Office, found in Part 7.9. In that request you must document which exemption you meet, provide evidence supporting any claims, and a copy of your completed paper form. A waiver may only be considered granted once you receive written confirmation from EPA or its authorized representative.

7.2 Submitting Information to EPA

7.2.1 Submitting Forms via NeT-MSGP. You must submit all required information via EPA's electronic NPDES eReporting tool (NeT), unless the permit states otherwise or unless you have been granted a waiver per Part 7.1. You can both prepare and submit required information in NeT-MSGP using specific forms, also found in the permit's appendices. To access NeT-MSGP, go to https://cdxnodengn.epa.gov/net-msgp/action/login.

Information you must submit to EPA via NeT-MSGP:

- Notice of Intent (NOI) (Part 1.3);
- Change Notice of Intent (NOI) (Part 1.3.4);

- No Exposure Certification (NEC) (Part 1.5);
- Notice of Termination (NOT) (Part 1.4); and
- Annual Report (AR) (Part 7.4).

Note: You must submit Discharge Monitoring Reports (see Part 7.3) electronically using Net-DMR.

If the applicable EPA Regional Office grants you a waiver from electronic reporting, you must use the required forms found in the Appendices.

7.2.2 **Other Information Required to be Submitted.** Information required to be submitted to the applicable EPA Regional Office at the address in Part 7.8:

- New Dischargers and New Sources to Water Quality-Impaired Waters (Part 1.1.6.2);
- Exceedance Report for Numeric Effluent Limitations (Part 7.5); and
- Additional Reporting (Part 7.6)

7.3 Reporting Monitoring Data to EPA

7.3.1 **Submitting Monitoring Data via NeT-DMR.** You must submit all stormwater discharge monitoring data collected pursuant to Part 4 to EPA using Net-DMR, EPA's electronic DMR system (for more information visit: https://www.epa.gov/compliance/npdes-ereporting (unless the applicable EPA Regional Office grants you a waiver from electronic reporting, in which case you may submit a paper DMR form) no later than 30 days after you have received your complete laboratory results for all monitoring discharge points for the reporting period. Your monitoring requirements (i.e., parameters required to be monitored and sample frequency) will be prepopulated on your electronic Discharge Monitoring Report (DMR) form based on the information you reported on your NOI form through the NeT-MSGP. Accordingly, you must certify the following changes to your monitoring frequency to EPA by submitting a Change NOI in NeT-MSGP, unless EPA has completed the development of planned features in the electronic systems to process submitted monitoring results to automatically turn monitoring on/off as applicable, which will trigger changes to your monitoring requirements in Net-DMR:

7.3.1.1 All benchmark monitoring requirements have been fulfilled for the permitterm;

7.3.1.2 All impaired waters monitoring requirements have been fulfilled for the permit term;

7.3.1.3 Benchmark monitoring requirements no longer apply because the EPA Regional Office has concurred with your assessment that run-on from a neighboring source is the cause of the exceedance;

7.3.1.4 Benchmark and/or impaired monitoring requirements no longer apply because your facility is inactive and unstaffed;

7.3.1.5 Benchmark and/or impaired monitoring requirements now apply because your facility has changed from inactive and unstaffed to active and staffed;

7.3.1.6 For Sector G2 only: Discharges from waste rock and overburden piles have exceeded benchmark thresholds;

7.3.1.7 A numeric effluent limitation guideline has been exceeded;

7.3.1.8 A numeric effluent limitation guideline exceedance is back in compliance.

7.3.2 **When You Can Discontinue Submission of Monitoring Data.** Once you have completely fulfilled applicable monitoring requirements, you are no longer required to report monitoring results using Net-DMR. If you have only partially fulfilled your benchmark monitoring and/or impaired waters monitoring requirements (e.g., your four quarterly average is below the benchmark for some, but not all, parameters; you did not detect some, but not all, impairment pollutants), you must continue to report your results in Net-DMR for the remaining monitoring requirements. If the EPA Regional Office grants you a waiver per Part 7.1, you must submit paper reporting forms by the same deadline.

7.3.3 **State or Tribal Required Monitoring Data.** See Part 9 for specific reporting requirements applicable to individual states or tribes.

7.3.4 **Submission Deadline for Indicator and Benchmark Monitoring Data.** For both indicator and benchmark monitoring, you are required to submit sampling results to EPA no later than 30 days after receiving your complete laboratory results for all monitored discharge points for each monitoring period that you are required to collect samples, per Part 4.2.1. and Part 4.2.2. If you collect samples during multiple storm events in a single quarter (e.g., due to adverse weather conditions, climates with irregular stormwater discharges, or areas subject to snow), you are required to submit all sampling results for each storm event to EPA within 30 days of receiving all laboratory results for the event. Or, for any of your monitored discharge points that did not have a discharge within the reporting period, using Net-DMR, you must report that no discharges occurred for that discharge point no later than 30 days after the end of the reporting period.

7.4 Annual Report

You must submit an Annual Report to EPA via NeT-MSGP, per Part 7.2, by January 30th for each year of permit coverage containing information generated from the past calendar year. You must include the following information in the Annual Report:

7.4.1 A summary of your past year's routine facility inspection documentation required (Part 3.1.6). In addition, if you are an operator of an airport facility (Sector S) that is subject to the airport effluent limitations guidelines and are complying with the Part 8.S.8.1 effluent limitation through the use of non-urea-containing deicers, provide a statement certifying that you do not use pavement deicers containing urea. (Note: Operators of airport facilities that are complying with Part 8.S.8.1 by meeting the numeric effluent limitation for ammonia do not need to include this statement.)

7.4.2 A summary of your past year's visual assessment documentation (see Part 3.2.3);

7.4.3 A summary of your past year's corrective action and any required AIM documentation (see Part 5.3). If you have not completed required corrective action or AIM responses at the time you submit your annual report, you must describe the status of any outstanding corrective action(s) or AIM responses. Also describe any incidents of noncompliance in the past year or currently ongoing, or if none, provide a statement that you are in compliance with the permit.

Your Annual Report must also include a statement, signed and certified in accordance with Appendix B, Subsection 11.

7.5 Numeric Effluent Limitations Exceedance Report

If follow-up monitoring per Part 4.2.3.3 exceeds a numeric effluent limit, you must submit an Exceedance Report to EPA no later than 30 days after you have received your laboratory results. Send the Exceedance Report to the applicable EPA Regional Office listed in Part 7.8, and report the monitoring data through Net-DMR. Your report must include the following:

7.5.1 NPDES ID;

7.5.2 Facility name, physical address and location;

7.5.3 Name of receiving water;

7.5.4 Monitoring data from this and the preceding monitoring event(s);

7.5.5 An explanation of the situation, including what you have done and intend to do (should your corrective actions not yet be complete) to correct the violation;

7.5.6 An appropriate contact name and phone number.

7.6 Additional Standard Recordkeeping and Reporting Requirements

In addition to the reporting requirements stipulated in Part 7, you are also subject to the standard permit reporting provisions of Appendix B, Subsection 12. You must submit the following reports to the applicable EPA Regional Office listed in Part 7.8, as applicable. If you discharge through an MS4, you must also submit these reports to the MS4 operator (identified pursuant to Part 6.2.2).

7.6.1 24-hour reporting (see Appendix B, Subsection 12.F) – You must report any noncompliance which may endanger health or the environment. Any information must be provided orally within 24 hours from the time you become aware of the circumstances;

7.6.2 5-day follow-up reporting to the 24-hour reporting (see Appendix B, Subsection 12.F) – A written submission must also be provided within five days of the time you become aware of the circumstances;

7.6.3 Reportable quantity spills (see Part 2.1.2.4) – You must provide notification, as required under Part 2.1.2.4, as soon as you have knowledge of a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity;

7.6.4 Planned changes (see Appendix B, Subsection 12.A) – You must give notice to EPA promptly, no fewer than 30 days prior to making any planned physical alterations or additions to the permitted facility that qualify the facility as a new source or that could significantly change the nature or significantly increase the quantity of pollutants discharged;

7.6.5 Anticipated noncompliance (see Appendix B, Subsection 12.B) – You must give advance notice to EPA of any planned changes in the permitted facility or activity which you anticipate will result in noncompliance with permit requirements;

7.6.6 Compliance schedules (see Appendix B, Subsection 12.F) – Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements

contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date;

7.6.7 Other noncompliance (see Appendix B, Subsection 12.G) – You must report all instances of noncompliance not reported in your Annual Report, compliance schedule report, or 24-hour report at the time monitoring reports are submitted; and

7.6.8 Other information (see Appendix B, Subsection 12.H) – You must promptly submit facts or information if you become aware that you failed to submit relevant facts in your NOI, or that you submitted incorrect information in your NOI or in any report.

7.7 Record Retention Requirements

You must retain copies of your SWPPP (including any modifications made during the term of this permit), additional documentation requirements pursuant to Part 6.5 (including documentation related to any corrective actions or AIM responses taken pursuant to Part 5), all reports and certifications required by this permit, monitoring data, and records of all data used to complete the NOI to be covered by this permit, for a period of at least three years from the date that your coverage under this permit expires or is terminated.

7.8 Addresses for Reports

Permit Part	EPA Region	Areas Covered	Address
7.8.1	1	Connecticut Massachusetts New Hampshire Rhode Island Vermont	U.S. EPA Region 1 Water Division Stormwater and Construction Permits Section 5 Post Office Square, Ste. 100 (06-1) Boston, MA 02109-3912
7.8.2	2	New Jersey New York	U.S. EPA Region 2 NPDES Stormwater Program 290 Broadway, 24th Floor New York, NY 10007-1866
		Puerto Rico Virgin Islands	U.S. EPA Region 2 Caribbean Environmental Protection Division NPDES Stormwater Program City View Plaza II – Suite 7000 48 Rd. 165 Km 1.2 Guaynabo, PR 00968-8069
7.8.3	3	Delaware District of Columbia Maryland Pennsylvania Virginia West Virginia	U.S. EPA Region 3 NPDES Permits Section, MC 3WD41 1650 Arch Street Philadelphia, PA 19103
7.8.4	4	Alabama Florida Georgia Kentucky Mississippi North Carolina	U.S. EPA Region 4 Water Division NPDES Stormwater Program Atlanta Federal Center 61 Forsyth Street SW Atlanta, GA 30303-3104

Permit Part	EPA Region	Areas Covered	Address
		South Carolina Tennessee	
7.8.5	5	Illinois Indiana Michigan Minnesota Ohio Wisconsin	U.S. EPA Region 5 NPDES Program Branch 77 W. Jackson Blvd. MC WP16J Chicago, IL 60604-3507
7.8.6	6	Arkansas Louisiana Oklahoma Texas New Mexico (except see Region 9 for Navajo lands, and see Region 8 for Ute Mountain Reservation lands)	U.S. EPA Region 6 Permitting Section (WD-PE) 1201 Elm Street, Suite 500 Dallas, TX 75270
7.8.7	7	Iowa Kansas Missouri Nebraska	U.S. EPA Region 7 NPDES Stormwater Program 11201 Renner Blvd Lenexa, KS 66219
7.8.8	8	Colorado Montana North Dakota South Dakota Wyoming Utah (except see Region 9 for Goshute Reservation and Navajo Reservation lands) The Ute Mountain Reservation in New Mexico The Pine Ridge Reservation in Nebraska	EPA Region 8 Storm Water Program MC: 8P-W-WW 1595 Wynkoop Street Denver, CO 80202-1129

Permit Part	EPA Region	Areas Covered	Address
7.8.9	9	Arizona California Hawaii Nevada Guam American Samoa The Commonwealth of the Northern Mariana Islands The Goshute Reservation in Utah and Nevada The Navajo Reservation in Utah New Mexico, and Arizona The Duck Valley Reservation in Idaho Fort McDermitt Reservation in Oregon	U.S. EPA Region 9 Water Division NPDES Stormwater Program (WTR-2-3) 75 Hawthorne Street San Francisco, CA 94105-3901
7.8.10	10	Alaska Idaho Oregon (except see Region 9 for Fort McDermitt Reservation) Washington	U.S. EPA Region 10 Water Division NPDES Stormwater Program (19-C04) 1200 6th Avenue, Suite 155 Seattle, WA 98101-3188
7.8.11	State and Tribal Addresses		See Part 9 (states and tribes) for the addresses of applicable states or tribes that require submission of information to their agencies.

9 Permit Conditions Applicable to Specific States, Indian Country Lands, or Territories

Section 401 of the CWA (see also 40 CFR §122.44(d)(3) and §124.53(a)) provides that no federal license or permit, including NPDES permits, to conduct any activity that may result in any discharge to waters of the United States shall be granted until the state/tribe in which the discharge originates certifies that the discharge will comply with the applicable provisions of sections 301, 302, 303, 306, and 307 of the CWA. The requirements under this Part of the permit provide state, U.S. territory, and tribal requirements that these entities certify are necessary in order for the permit to comply with applicable water quality requirements.

The conditions below have been incorporated into the 2021 MSGP based on the certifications granted for the 2021 MSGP. These conditions apply for activities conducted under this permit that occur within the jurisdiction that established the condition. Any references below to the "2020 MSGP," "MSGP 2020," "2020 proposed MSGP," "proposed permit," or similar refer to the final 2021 MSGP.

9.1 EPA Region 1: Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont

9.1.1 CTR05I000: Indian Country within the State of Connecticut

No additional requirements.

9.1.2 MAR050000: Commonwealth of Massachusetts, except Indian country

Operators in the Commonwealth of Massachusetts must meet the following conditions (see certification provided by the Commonwealth of Massachusetts, CWA401Cert_MA_2021 MSGP):

9.1.2.1 *Additional conditions required by the Commonwealth of Massachusetts.*

Discharges covered by the general permit must comply with the provisions of 314 CMR 3.00, 314 CMR 4.00, 314 CMR 9.00, and 310 CMR 10.00. New facilities or redevelopment of existing facilities subject to this permit must comply with applicable stormwater performance standards prescribed by state regulation. A permit under 314 CMR 3.04 is not required for existing facilities that meet state stormwater performance standards. An application for a permit under 314 CMR 3.00 is required only when required under 314 CMR 3.04(2)(b) (designation of a discharge on a case-by-case basis) or is otherwise identified in 314 CMR 3.00 as a discharge requiring a permit application. See *id.* at 1-2.

9.1.2.2 *SWPPP Availability.*

MassDEP may request a copy of the Stormwater Pollution Prevention Plan (SWPPP) at any time, and the permittee is required to submit the SWPPP to MassDEP within 14 days of such a request. MassDEP may conduct an inspection of any facility covered by this permit to ensure compliance with state law requirements, including state water quality standards. MassDEP may enforce its certification conditions. See *id.*

9.1.2.3 *New Dischargers.*

For new dischargers applying to be covered under the MSGP and proposing to discharge to Outstanding Resource Waters as identified in 314 CMR 4.00, MassDEP will require applicants to submit a copy of the Stormwater Pollution Prevention Plan (SWPPP) for review. For purposes of this review the applicant is required to submit a copy of the EPA NOI and SWPPP to MassDEP at the same time they are submitted to EPA. Instructions on how to submit these documents to MassDEP can be found here: https://www.mass.gov/how-to/wm-15-npdes-general-permit-notice-of-intent. See *id.*

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart A – Sector A – Timber Products

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.A.1 Covered Stormwater Discharges

The requirements in Subpart A apply to stormwater discharges associated with industrial activity from Timber Products facilities as identified by the SIC Codes specified under Sector A in Table D-1 of Appendix D of the permit.

8.A.2 Limitations on Coverage

8.A.2.1 ***Prohibition of Discharges.*** (See also Part 1.1.3) Not covered by this permit: stormwater discharges from areas where there may be contact with the chemical formulations sprayed to provide surface protection. These discharges must be covered by a separate NPDES permit.

8.A.2.2 ***Authorized Non-Stormwater Discharges.*** (See also Part 1.2.2) Also authorized by this permit, provided the non-stormwater component of the discharge is in compliance with the requirements in Part 2.1.2 (Non-Numeric Effluent Limits): discharges from the spray down of lumber and wood product storage yards where no chemical additives are used in the spray-down waters and no chemicals are applied to the wood during storage.

8.A.3 Additional Technology-Based Effluent Limits

8.A.3.1 ***Good Housekeeping.*** (See also Part 2.1.2.2) In areas where storage, loading and unloading, and material handling occur, perform good housekeeping to minimize the discharge of wood debris, leachate generated from decaying wood materials, and the generation of dust.

8.A.4 Additional SWPPP Requirements

8.A.4.1 ***Drainage Area Site Map.*** (See also Part 6.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or stormwater: processing areas, treatment chemical storage areas, treated wood and residue storage areas, wet decking areas, dry decking areas, untreated wood and residue storage areas, and treatment equipment storage areas.

8.A.4.2 ***Inventory of Exposed Materials***. (See also Part 6.2.3.2) Where such information exists, if your facility has used chlorophenolic, creosote, or chromium-copper-arsenic formulations for wood surface protection or preserving, document in your SWPPP the following: areas where contaminated soils, treatment equipment, and stored materials still remain and the management practices employed to minimize the contact of these materials with stormwater.

8.A.4.3 ***Description of Stormwater Management Controls.*** (See also Part 6.2.4) Document measures implemented to address the following activities and sources: log, lumber, and wood product storage areas; residue storage areas; loading and unloading

areas; material handling areas; chemical storage areas; and equipment and vehicle maintenance, storage, and repair areas. If your facility performs wood surface protection and preservation activities, address the specific control measures, including any BMPs, for these activities.

8.A.5 Additional Inspection Requirements. (See also Part 3.1)

If your facility performs wood surface protection and preservation activities, inspect processing areas, transport areas, and treated wood storage areas monthly to assess the usefulness of practices to minimize the deposit of treatment chemicals on unprotected soils and in areas that will come in contact with stormwater discharges.

8.A.6 Indicator Monitoring (See also Part 4.2.1)

Table 8.A-1 identifies indicator monitoring that applies to the specific subsectors of Sector A. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.A-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector A (Subsectors A1, A2, A3, and A4) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Applies to all Sector A (Subsectors A1, A2, A3, and A4) facilities that manufacture, use, or store creosote or creosote-treated wood in areas that are exposed to precipitation	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.A.7 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.A-2 identifies benchmarks that apply to the specific subsectors of Sector A. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.A-2		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector A1. General Sawmills and Planing Mills (SIC 2421)	Chemical Oxygen Demand (COD)	120.0 mg/L
	Total Suspended Solids (TSS)	100 mg/L
	Total Recoverable Zinc (freshwater)[1]	Hardness Dependent
	Total Recoverable Zinc (saltwater)[2]	90 µg/L
Subsector A2. Wood Preserving (SIC 2491)	Total Recoverable Arsenic (freshwater)	150 µg/L
	Total Recoverable Arsenic (saltwater)[1]	69 µg/L
	Total Recoverable Copper (freshwater)	5.19 µg/L
	Total Recoverable Copper (saltwater)[2]	4.8 µg/L
Subsector A3. Log Storage and Handling (SIC 2411)	Total Suspended Solids (TSS)	100 mg/L
Subsector A4. Hardwood Dimension and Flooring Mills; Special Products Sawmills, not elsewhere classified; Millwork, Veneer, Plywood, and Structural Wood; Wood Pallets and Skids; Wood Containers, not elsewhere classified; Wood Buildings and Mobile Homes; Reconstituted Wood Products; and Wood Products Facilities not elsewhere classified (SIC 2426, 2429, 2431-2439 (except 2434), 2441, 2448, 2449, 2451, 2452, 2493, and 2499)	Chemical Oxygen Demand (COD)	120.0 mg/L
	Total Suspended Solids (TSS)	100.0 mg/L

[1] The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 4.2.2.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	Zinc
0-24.99 mg/L	37
25-49.99 mg/L	52
50-74.99 mg/L	80
75-99.99 mg/L	107
100-124.99 mg/L	132
125-149.99 mg/L	157
150-174.99 mg/L	181
175-199.99 mg/L	204
200-224.99 mg/L	227

225-249.99 mg/L	249
250+ mg/L	260

[2] Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.

8.A.8 Effluent Limitations Based on Effluent Limitations Guidelines. (See also Part 4.2.3)

Table 8.A-3 identifies effluent limits that apply to the industrial activities described below.

Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.A-3[1]

Industrial Activity	Paramete	Effluent Limitation
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	pH	6.0 - 9.0 s.u
	Debris (woody material such as bark, twigs, branches, heartwood, or sapwood)	No discharge of debris that will not pass through a 2.54-cm (1-in.) diameter round

[1] Monitor annually.

8.A.8.1 ***Credit for Pollutants in Intake Water.*** For discharges that are comprised solely of water drawn from the same body of water into which the discharges flow and that exceed an applicable effluent limitation, you may be eligible for a credit to the extent necessary to meet the limitation. To obtain this credit, you must show that your discharge would meet the limitation in the absence of the pollutant(s) in the intake water by demonstrating that the control measures you use to meet the limitation would, if properly installed and operated, meet the limitations for the pollutant (i.e., the pollutant level in your discharge is in exceedance of the limitation due to the pollutant concentration in the source or intake water). You must consult the appropriate EPA Regional Office for guidance in seeking a pollutant credit under this Part. EPA will notify you whether you are eligible for the credit, and, if so, provide the scope of such credit.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart B – Sector B – Paper and Allied Products

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.B.1 Covered Stormwater Discharges

The requirements in Subpart B apply to stormwater discharges associated with industrial activity from Paper and Allied Products Manufacturing facilities, as identified by the SIC Codes specified under Sector B in Table D-1 of Appendix D of the permit.

8.B.2 Indicator Monitoring (See also Part 4.2.1)

Table 8.B-1 identifies indicator monitoring that applies to the specific subsectors of Sector B. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.B-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector B (Subsectors B1 and B2) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector B2. Pulp Mills (SIC Code 2611); Paper Mills (SIC Code 2621); Paperboard Containers and Boxes (SIC Code 2652-2657); Converted Paper and Paperboard Products, Except Containers and Boxes (SIC Code 2671-2679)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.B.3 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.B-2 identifies benchmarks that apply to the specific subsectors of Sector B. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.B-2.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector B1. Paperboard Mills (SIC Code 2631)	Chemical Oxygen Demand (COD)	120 mg/L

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart C – Sector C – Chemical and Allied Products Manufacturing, and Refining

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.C.1 Covered Stormwater Discharges

The requirements in Subpart C apply to stormwater discharges associated with industrial activity from Chemical and Allied Products Manufacturing, and Refining facilities, as identified by the SIC Codes specified under Sector C in Table D-1 of Appendix D of the permit.

8.C.2 Limitations on Coverage

8.C.2.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.3) The following are not covered by this permit: non-stormwater discharges containing inks, paints, or substances (hazardous, nonhazardous, etc.) resulting from an onsite spill, including materials collected in drip pans; wash water from material handling and processing areas; and wash water from drum, tank or container rinsing and cleaning. (EPA includes this prohibited non-stormwater discharge here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2.)

8.C.3 Indicator Monitoring (See also Part 4.2.1)

Table 8.C-1 identifies indicator monitoring that applies to the specific subsectors of Sector C. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.C-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector C (Subsectors C1, C2, C3, C4, and C5) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

Table 8.C-1		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Indicator Monitoring Parameter**	**Indicator Monitoring Threshold**
Subsector C5. Medicinal Chemicals and Botanical Products; Pharmaceutical Preparations; in vitro and in vivo Diagnostic Substances; and Biological Products, Except Diagnostic Substances (SIC Code 2833-2836); Paints, Varnishes, Lacquers, Enamels, and Allied Products (SIC Code 2851); Industrial Organic Chemicals (SIC Code 2861-2869); Miscellaneous Chemical Products (SIC Code 2891-2899); Inks and Paints, Including China Painting Enamels, India Ink, Drawing Ink, Platinum Paints for Burnt Wood or Leather Work, Paints for China Painting, Artist's Paints and Artist's Watercolors (SIC Code 3952 (limited to list of inks and paints)); Petroleum Refining (SIC Code 2911)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values
Subsector C5. Petroleum Refining (SIC Code 2911)	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.C.4 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.C-2 identifies benchmarks that apply to the specific subsectors of Sector C. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.C-2.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector C1. Agricultural Chemicals (SIC 2873-2879)	Nitrate plus Nitrite Nitrogen	0.68 mg/L
	Total Recoverable Lead (freshwater)[2] Total Recoverable Lead (saltwater)[1]	Hardness Dependent 210 µg/L
	Total Recoverable Zinc (freshwater)[2] Total Recoverable Zinc (saltwater)[1]	Hardness Dependent 90 µg/L
	Total Phosphorus	2.0 mg/L

Table 8.C-2.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector C2. Industrial Inorganic Chemicals (SIC 2812-2819)	Total Recoverable Aluminum	1,100 µg/L
	Nitrate plus Nitrite Nitrogen	0.68 mg/L
Subsector C3. Soaps, Detergents, Cosmetics, and Perfumes (SIC 2841-2844)	Nitrate plus Nitrite Nitrogen	0.68 mg/L
	Total Recoverable Zinc (freshwater)[2] Total Recoverable Zinc (saltwater)[1]	Hardness Dependent 90 µg/L
Subsector C4. Plastics, Synthetics, and Resins (SIC 2821-2824)	Total Recoverable Zinc (freshwater)[2] Total Recoverable Zinc (saltwater)[1]	Hardness Dependent 90 µg/L

[1] Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.

[2] The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 4.2.2.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	**Lead** (µg/L)	**Zinc** (µg/L)
0-24.99 mg/L	14	37
25-49.99 mg/L	24	52
50-74.99 mg/L	45	80
75-99.99 mg/L	69	107
100-124.99 mg/L	95	132
125-149.99 mg/L	123	157
150-174.99 mg/L	152	181
175-199.99 mg/L	182	204
200-224.99 mg/L	213	227
225-249.99 mg/L	246	249
250+ mg/L	262	260

8.C.5 Effluent Limitations Based on Effluent Limitations Guidelines (See also Part4.2.3.1)

Table 8.C-3 identifies effluent limits that apply to the industrial activities described below.

Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.C-3[1]		
Industrial Activity	**Parameter**	**Effluent**
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	Total Phosphorus (as P)	105.0 mg/L, daily maximum
		35 mg/L, 30-day avg.
	Fluoride	75.0 mg/L, daily maximum
		25.0 mg/L, 30-day avg.

[1] Monitor annually.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart D – Sector D – Asphalt Paving and Roofing Materials and Lubricant Manufacturing

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.D.1 Covered Stormwater Discharges

The requirements in Subpart D apply to stormwater discharges associated with industrial activity from Asphalt Paving and Roofing Materials and Lubricant Manufacturing facilities, as identified by the SIC Codes specified under Sector D in Table D-1 of Appendix D of the permit.

8.D.2 Limitations on Coverage

The following stormwater discharges associated with industrial activity are not authorized by this permit (see also Part 1.1.3):

8.D.2.1 ***Stormwater discharges from petroleum refining facilities, including those that manufacture asphalt or asphalt products, that are subject to nationally established effluent limitation guidelines found in 40 CFR Part 419 (Petroleum Refining).***

The following stormwater discharges associated with industrial activity are not authorized under Sector D:

8.D.2.2 ***Stormwater discharges from oil recycling facilities, which are covered under Sector N*** (see Part 8.N); and

8.D.2.3 ***Stormwater discharges associated with fats and oils rendering, which are covered under Sector U*** (see Part 8.U).

8.D.3 Indicator Monitoring (See also Part 4.2.1)

Table 8.D-1 identifies indicator monitoring that applies to the specific subsectors of Sector D. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.D-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector D (Subsectors D1 and D2) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector D1. Asphalt Paving and Roofing Materials (SIC Code 2951, 2952)	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

Table 8.D-1		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Indicator Monitoring Parameter**	**Indicator Monitoring Threshold**
Subsector D2. Miscellaneous Products of Petroleum and Coal (SIC Code 2992, 2999)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values
	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.D.4 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.D-2 identifies benchmarks that apply to the specific subsectors of Sector D. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.D-2.		
Subsector	**Parameter**	**Benchmark Monitoring Concentration**
Subsector D1. Asphalt Paving and Roofing Materials (SIC 2951, 2952)	Total Suspended Solids (TSS)	100 mg/L

8.D.5 Effluent Limitations Based on Effluent Limitations Guidelines (See also Part 4.2.3.1)

Table 8.D-3 identifies effluent limitations that apply to the industrial activities described below. Compliance with these effluent limitations is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.D-3[1]		
Industrial Activity	**Parameter**	**Effluent Limitation**
Discharges from asphalt emulsion facilities.	Total Suspended Solids (TSS)	23.0 mg/L, daily maximum 15.0 mg/L, 30-day avg.
	pH	6.0 - 9.0 s.u.
	Oil and Grease	15.0 mg/L, daily maximum
		10 mg/L, 30-day avg.

[1]Monitor annually.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart E – Sector E – Glass, Clay, Cement, Concrete, and Gypsum Products

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.E.1 Covered Stormwater Discharges

The requirements in Subpart E apply to stormwater discharges associated with industrial activity from Glass, Clay, Cement, Concrete, and Gypsum Products facilities, as identified by the SIC Codes specified under Sector E in Table D-1 of Appendix D of the permit.

8.E.2 Additional Technology-Based Effluent Limits

8.E.2.1 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2) As part of your good housekeeping program, prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), kiln dust, fly ash, settled dust, or other significant material in stormwater from paved portions of the site that are exposed to stormwater. Sweep or vacuum paved surfaces of the site that are exposed to stormwater at regular intervals or use other equivalent measures (e.g., wash down the area and collect and/or treat and properly dispose of the washdown water) to minimize the potential discharge of these materials in stormwater. Indicate in your SWPPP the frequency of sweeping, vacuuming or other equivalent measures. Determine the frequency based on the amount of industrial activity occurring in the area and the frequency of precipitation, but it must be performed at least once a week in areas where cement, aggregate, kiln dust, fly ash or settled dust are being handled or processed and may be discharged in stormwater. You must also prevent the exposure of fine granular solids (e.g., cement, fly ash, kiln dust) to stormwater, where practicable, by storing these materials in enclosed silos, hoppers, buildings or under other covering.

8.E.3 Additional SWPPP Requirements

8.E.3.1 ***Drainage Area Site Map.*** (See also Part 6.2.2) Document in the SWPPP the locations of the following, as applicable: bag house or other dust control device; recycle/ sedimentation pond, clarifier, or other device used for the treatment of process wastewater; and the areas that drain to the treatment device.

8.E.3.2 ***Discharge Testing.*** (See also Part 6.2.3.4) For facilities producing ready-mix concrete, concrete block, brick, or similar products, include in the non-stormwater discharge testing a description of measures that ensure that process wastewaters resulting from washing trucks, mixers, transport buckets, forms, or other equipment are discharged in accordance with NPDES wastewater permit requirements or are recycled.

8.E.4 Indicator Monitoring. (See also Part 4.2.1)

Table 8.E-1 identifies indicator monitoring that applies to the specific subsectors of Sector E. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.E-1		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Indicator Monitoring Parameter**	**Indicator Monitoring Threshold**
Applies to all Sector E (Subsectors E1, E2, and E3) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during your coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector E3. Flat Glass (SIC Code 3211); Glass and Glassware, Pressed or Blown (SIC Code 3221, 3229); Glass Products Made of Purchased Glass (SIC Code 3231); Hydraulic Cement (SIC Code 3241); Cut Stone and Stone Products (SIC Code 3281); Abrasive, Asbestos, and Miscellaneous Nonmetallic Mineral Products (SIC Code 3291-3299)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.E.5 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.E-2 identifies benchmarks that apply to the specific subsectors of Sector E. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.E-2.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector E1. Clay Product Manufacturers (SIC 3251-3259, 3261-3269)	Total Recoverable Aluminum	1,100 µg/L
Subsector E2. Concrete and Gypsum Product Manufacturers (SIC 3271-3275)	Total Suspended Solids (TSS)	100 mg/L

8.E.6 Effluent Limitations Based on Effluent Limitations Guidelines (See also Part 4.2.3.1)

Table 8.E-3 identifies effluent limits that apply to the industrial activities described below.

Compliance with these limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.E-3[1]		
Industrial Activity	**Parameter**	**Effluent Limitation**
Discharges from material storage piles at cement manufacturing facilities (SIC 3241)	Total Suspended Solids (TSS)	50 mg/L, daily maximum[2]
	pH	6.0 - 9.0 s.u.[2]

[1] Monitor annually.

[2] Any untreated overflow from facilities designed, constructed and operated to treat the volume of stormwater from materials storage piles which is associated with a 10-year, 24-hour rainfall event shall not be subject to the pH and TSS limitations (40 CFR 411.32(b)).

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart F – Sector F – Primary Metals

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.F.1 Covered Stormwater Discharges

The requirements in Subpart F apply to stormwater discharges associated with industrial activity from Primary Metals facilities, as identified by the SIC Codes specified under Sector F in Table D-1 of Appendix D of the permit.

8.F.2 Additional Technology-Based Effluent Limits

8.F.2.1 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2) As part of your good housekeeping program, you must implement a cleaning and maintenance program for all impervious areas of the facility where particulate matter, dust or debris may accumulate to minimize the discharge of pollutants in stormwater. The cleaning and maintenance program must encompass, as appropriate, areas where material loading and unloading, storage, handling and processing occur.

Stabilize unpaved areas using vegetation or paving where there is vehicle traffic or where material loading and unloading, storage, handling and processing occurs, unless feasible.

For paved areas of the facility where particulate matter, dust or debris may accumulate, to minimize the discharge of pollutants in stormwater, implement control measures such as the following, where determined to be feasible (list not exclusive): sweeping or vacuuming at regular intervals; and washing down the area and collecting and/or treating and properly disposing of the washdown water. For unstabilized areas or for stabilized areas where sweeping, vacuuming, or washing down is not possible, to minimize the discharge of particulate matter, dust, or debris or other pollutants in stormwater, implement stormwater management devices such as the following, where determined to be feasible (list not exclusive): sediment traps, vegetative buffer strips, filter fabric fence, sediment filtering boom, gravel outlet protection, and other equivalent measures that effectively trap or remove sediment.

8.F.3 Additional SWPPP Requirements

8.F.3.1 ***Drainage Area Site Map.*** (See also Part 6.2.2) Identify in the SWPPP where any of the following activities may be exposed to precipitation or stormwater: storage or disposal of wastes such as spent solvents and baths, sand, slag and dross; liquid storage tanks and drums; processing areas including pollution control equipment (e.g., baghouses); and storage areas of raw material such as coal, coke, scrap, sand, fluxes, refractories or metal in any form. In addition, indicate where an accumulation of significant amounts of particulate matter could occur from such sources as furnace or oven emissions, losses from coal and coke handling operations, etc., and could result in a discharge of pollutants in stormwater.

8.F.3.2 ***Inventory of Exposed Material.*** (See also Part 6.2.3) Include in the inventory of materials handled at the site that potentially may be exposed to precipitation or

stormwater: areas where there is the potential for deposition of particulate matter from process air emissions or losses during material-handling activities.

8.F.4 Additional Inspection Requirements (See also Part 3.1)

As part of conducting your routine facility inspections at least quarterly (Part 3.1), address all potential sources of pollutants, including (if applicable) air pollution control equipment (e.g., baghouses, electrostatic precipitators, scrubbers, cyclones), for any signs of degradation (e.g., leaks, corrosion, improper operation) that could limit their efficiency and lead to excessive emissions. Consider monitoring air flow at inlets and outlets (or use equivalent measures) to check for leaks (e.g., particulate deposition) or blockage in ducts. Also inspect all process and material handling equipment (e.g., conveyors, cranes and vehicles) for leaks, drips, or the potential loss of material; and material storage areas (e.g., piles, bins, or hoppers for storing coke, coal, scrap or slag, as well as chemicals stored in tanks and drums) for signs of material losses due to wind or stormwater.

8.F.5 Indicator Monitoring (See also Part 4.2.1)

Table 8.F-1 identifies indicator monitoring that applies to the specific subsectors of Sector F. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.F-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector F (Subsectors F1, F2, F3, F4, and F5) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector F1. Steel Works, Blast Furnaces, and Rolling and Finishing Mills (SIC Code 3312-3317)	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector F2. Iron and Steel Foundries (SIC Code 3321-3325)	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector F3. Rolling, Drawing, and Extruding of Nonferrous Metals (SIC Code 3351-3357)	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector F4. Nonferrous Foundries (Castings) (SIC Code 3363-3369)	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

Table 8.F-1		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Indicator Monitoring Parameter**	**Indicator Monitoring Threshold**
Subsector F5. Primary Smelting and Refining of Nonferrous Metals (SIC Code 3331-3339); Secondary Smelting and Refining of Nonferrous Metals (SIC Code 3341); Miscellaneous Primary Metal Products (SIC Code 3398, 3399)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values
	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.F.6 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.F-2 identifies benchmarks that apply to the specific subsectors of Sector F. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.F-2.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector F1. Steel Works, Blast Furnaces, and Rolling and Finishing Mills (SIC 3312-3317)	Total Recoverable Aluminum	1,100 µg/L
	Total Recoverable Zinc (freshwater)[2] Total Recoverable Zinc (saltwater)[1]	Hardness Dependent 90 µg/L
Subsector F2. Iron and Steel Foundries (SIC 3321-3325)	Total Recoverable Aluminum	1,100 µg/L
	Total Suspended Solids (TSS)	100 mg/L
	Total Recoverable Copper (freshwater) Total Recoverable Copper (saltwater)[1]	5.19 µg/L 4.8 µg/L
	Total Recoverable Zinc (freshwater)[2] Total Recoverable Zinc (saltwater)[1]	Hardness Dependent 90 µg/L

Table 8.F-2.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector F3. Rolling, Drawing, and Extruding of Nonferrous Metals (SIC 3351-3357)	Total Recoverable Copper (freshwater) Total Recoverable Copper (saltwater)[1]	5.19 µg/L 4.8 µg/L
	Total Recoverable Zinc (freshwater)[2] Total Recoverable Zinc (saltwater)[1]	Hardness Dependent 90 µg/L
Subsector F4. Nonferrous Foundries (SIC 3363-3369)	Total Recoverable Copper (freshwater) Total Recoverable Copper (saltwater)[1]	5.19 µg/L 4.8 µg/L
	Total Recoverable Zinc (freshwater)[2] Total Recoverable Zinc (saltwater)[1]	Hardness Dependent 90 µg/L

[1] Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.

[2] The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 4.2.2.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	**Zinc**
0-24.99 mg/L	37
25-49.99 mg/L	52
50-74.99 mg/L	80
75-99.99 mg/L	107
100-124.99 mg/L	132
125-149.99 mg/L	157
150-174.99 mg/L	181
175-199.99 mg/L	204
200-224.99 mg/L	227
225-249.99 mg/L	249
250+ mg/L	260

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart G – Sector G – Metal Mining

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

Note: Where compliance with a requirement in a separate exploration permit, mining permit, reclamation plan, Surface Mining Control and Reclamation Act (SMCRA) requirements, etc. will result in you fully meeting any requirement in this Subpart, you are considered to have complied with the relevant requirement in this Subpart. You must include documentation in your SWPPP describing your rationale for concluding that any particular action on your part is sufficient to comply with the corresponding requirement in this Subpart.

8.G.1 Covered Stormwater Discharges

The requirements in Subpart G apply to stormwater discharges associated with industrial activity from Metal Mining facilities, including mines abandoned on Federal lands, as identified by the SIC Codes specified under Sector G in Table D-1 of Appendix D. Coverage is required for metal mining facilities that discharge stormwater contaminated by contact with, or that has come into contact with, any overburden, raw material, intermediate product, finished product, byproduct, or waste product located on the site of the operation.

8.G.1.1 ***Covered Discharges from Inactive Facilities.*** All stormwater discharges.

8.G.1.2 ***Covered Discharges from Active and Temporarily Inactive Facilities.*** Only the stormwater discharges from the following areas are covered:

- Waste rock and overburden piles if composed entirely of stormwater and not combined with mine drainage;
- Topsoil piles;
- Offsite haul and access roads;
- Onsite haul and access roads constructed of waste rock, overburden or spent ore if composed entirely of stormwater and not combining with mine drainage;
- Onsite haul and access roads not constructed of waste rock, overburden or spent ore except if mine drainage is used for dust control;
- Discharges from tailings dams or dikes when not constructed of waste rock or tailings and no process fluids are present;
- Discharges from tailings dams or dikes when constructed of waste rock or tailings and no process fluids are present, if composed entirely of stormwater and not combining with mine drainage;
- Concentration building if no contact with material piles;
- Mill site if no contact with material piles;
- Office or administrative building and housing if mixed with stormwater from industrial area;
- Chemical storage area;

- Docking facility if no excessive contact with waste product that would otherwise constitute mine drainage;
- Explosive storage;
- Fuel storage;
- Vehicle and equipment maintenance area and building;
- Parking areas (if necessary);
- Power plant;
- Truck wash areas if no excessive contact with waste product that would otherwise constitute mine drainage;
- Unreclaimed, disturbed areas outside of active mining area;
- Reclaimed areas released from reclamation requirements prior to December 17, 1990;
- Partially or inadequately reclaimed areas or areas not released from reclamation requirements.

8.G.1.3 ***Covered Discharges from Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*** All stormwater discharges.

8.G.1.4 ***Covered Discharges from Facilities Undergoing Reclamation.*** All stormwater discharges.

8.G.2 **Limitations on Coverage**

8.G.2.1 ***Prohibition of Stormwater Discharges.*** Stormwater discharges not authorized by this permit: discharges from active metal mining facilities that are subject to effluent limitation guidelines for the Ore Mining and Dressing Point Source Category (40 CFR Part 440).

Note: Stormwater discharges from these sources are subject to 40 CFR Part 440 if they are mixed with other discharges subject to Part 440. In this case, they are not eligible for coverage under this permit. Discharges from overburden/waste rock and overburden/waste rock-related areas are not subject to 40 CFR Part 440 unless they: drain naturally (or are intentionally diverted) to a point source; and (2) combine with "mine drainage" that is otherwise regulated under the Part 440 regulations. For such sources, coverage under this permit would be available if the discharge composed entirely of stormwater does not combine with other sources of mine drainage that are not subject to 40 CFR Part 440, and meets the other eligibility criteria contained in Part 1.1 of the permit. Operators bear the initial responsibility for determining if they are eligible for coverage under this permit, or must seek coverage under another NPDES permit. EPA recommends that operators contact the relevant NPDES permit issuance authority for assistance to determine the nature and scope of the "active mining area" on a mine-by-mine basis, as well as to determine the appropriate permitting mechanism for authorizing such discharges.

8.G.2.2 ***Prohibition of Non-Stormwater Discharges.*** Not authorized by this permit: adit drainage, and contaminated springs or seeps discharging from waste rock dumps that do not directly result from precipitation events (see also the standard Limitations on Coverage in Part 1.1.3). (EPA includes these prohibited non-stormwater discharges

here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2)

8.G.3 Definitions

The following definitions are not intended to supersede the definitions of active and inactive mining facilities established by 40 CFR 122.26(b)(14)(iii).

8.G.3.1 ***Mining operations.*** For this permit, mining operations are grouped into two distinct categories, with distinct effluent limits and requirements applicable to each: a) earth-disturbing activities conducted prior to active mining activities); and b) active mining activities, which includes reclamation. "Mining operations" can occur at both inactive mining facilities and temporarily inactive mining facilities.

8.G.3.2 ***Earth-disturbing activities conducted prior to active mining activities.*** Consists of two classes of earth-disturbing (i.e., clearing, grading and excavation) activities:

- **a.** activities performed for purposes of mine site preparation, including: cutting new rights of way (except when related to access road construction); providing access to a mine site for vehicles and equipment (except when related to access road construction); other earth disturbances associated with site preparation activities on any areas where active mining activities have not yet commenced (e.g., for heap leach pads, waste rock facilities, tailings impoundments, wastewater treatment plants); and

- **b.** construction of staging areas to prepare for erecting structures such as to house project personnel and equipment, mill buildings, etc., and construction of access roads. Earth-disturbing activities associated with the construction of staging areas and the construction of access roads conducted prior to active mining are considered to be "construction" and have additional effluent limits in Part 8.G.4.2.

8.G.3.3 ***Active mining activities.*** Activities related to the extraction, removal or recovery, and beneficiation of metal ore from the earth; removal of overburden and waste rock to expose mineable minerals; and site reclamation and closure activities. All such activities occur within the "active mining area." Reclamation involves activities undertaken, in compliance with applicable mined land reclamation requirements, to return the land to an appropriate post-mining contour and land use in order to meet applicable federal and state reclamation requirements. In addition, once earth-disturbing activities conducted prior to active mining activities have ceased and all related requirements in Part 8.G.4 have been met, and a well-delineated "active mining area" has been established, all activities (including any clearing, grading, and excavation) that occur within the active mining area are "active mining activities."

8.G.3.4 ***Active mining area.*** A place where work or other activity related to the extraction, removal or recovery of metal ore is being conducted, except, with respect to surface mines, any area of land on or in which grading has been completed to return the earth to desired contour and reclamation work has begun.

Note: Earth-disturbing activities described in the definition in Part 8.G.3.2 that occur on areas outside the active mining area (e.g., for expansion of the mine into undeveloped territory) are considered "earth-disturbing conducted prior to active mining activities", and must comply with the requirements in Part 8.G.4.

8.G.3.5 ***Inactive metal mining facility.*** A site or portion of a site where metal mining and/or milling occurred in the past but there are no active mining activities occurring as defined above, and where the inactive portion is not covered by an active mining permit issued by the applicable state or federal agency. An inactive metal mining facility has an identifiable owner / operator. Sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials and sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim are not considered either active or inactive mining facilities and do not require an NPDES industrial stormwater permit.

8.G.3.6 ***Temporarily inactive metal mining facility.*** A site or portion of a site where metal mining and/or milling occurred in the past but currently are not being actively undertaken, and the facility is covered by an active mining permit issued by the applicable state or federal agency.

8.G.4 Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities

Stormwater discharges from earth-disturbing activities conducted prior to active mining activities (defined in Part 8.G.3.2) are covered under this permit. For such earth-disturbing activities, you must comply with all applicable requirements in Parts 1-9 of the MSGP except for the technology-based effluent limits in Part 8.G.5 and Part 2.1.2, the inspection requirements in Part 8.G.7 and Part 3, and the monitoring requirements in Part 8.G.8 and Part 4.

Authorized discharges from areas where earth-disturbing activities have ceased and stabilization as specified in Part 8.G.4.1.9 or 8.G.4.2.11, where appropriate, has been completed (stabilization is not required for areas where active mining activities will occur), are no longer subject to the Part 8.G.4 requirements. At such time, authorized discharges become subject to all other applicable requirements in the MSGP, including the effluent limits in Parts 2.1.2 and 8.G.5, the inspection requirements in Parts 3 and 8.G.7, and the monitoring requirements in Parts 4 and 8.G.8.

8.G.4.1 ***Technology-Based Effluent Limits Applicable to All Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*** The following technology-based effluent limits apply to authorized discharges from all earth-disturbing activities conducted prior to active mining activities defined in Part 8.G.3.2(a) and 8.G.3.2(b). These limits supersede the technology-based limits listed in Part 2.1.2 and Part 8.G.5 of the MSGP.

8.G.4.1.1 Erosion and sediment control installation requirements.

- By the time construction activities commence, install and make operational downgradient sediment controls, unless this timeframe is infeasible. If infeasible you must install and make such controls operational as soon as practicable or as soon as site conditions permit.
- All other stormwater controls described in the SWPPP must be installed and made operational as soon as conditions on each portion of the site allows.

8.G.4.1.2 Erosion and sediment control maintenance requirements. You must:

- Ensure that all erosion and sediment controls remain in effective operating condition.
- Wherever you determine that a stormwater control needs maintenance to continue operating effectively, initiate efforts to fix

the problem immediately after its discovery, and complete such work by the end of the next work day.

- When a stormwater control must be replaced or significantly repaired, complete the work within 7 days, unless infeasible. If 7 days is infeasible, you must complete the installation or repair as soon as practicable.

8.G.4.1.3 **Perimeter controls.** You must:

- Install sediment controls along those perimeter areas of your disturbed area that will receive stormwater, except where site conditions prevent the use of such controls (in which case, maximize their installation to the extent practicable).
- Remove sediment before it accumulates to one-half of the above-ground height of any perimeter control.

8.G.4.1.4 ***Sediment track-out.*** For construction vehicles and equipment exiting the site directly onto paved roads, you must:

- Use appropriate stabilization techniques to minimize sediment track-out from vehicles and equipment prior to exit;
- Use additional controls to remove sediment from vehicle and equipment tires prior to exit, where necessary;
- Remove sediment that is tracked out onto paved roads by end of the work day.

Note: EPA recognizes that some fine grains may remain visible on the surfaces of off-site streets, other paved areas, and sidewalks even after you have implemented sediment removal practices. Such "staining" is not a violation of Part 8.G.4.1.4.

8.G.4.1.5 ***Soil or sediment stockpiles.*** You must:

- Minimize erosion of stockpiles from stormwater and wind via temporary cover, if feasible.
- Prevent up-slope stormwater flows from causing erosion of stockpiles (e.g., by diverting flows around the stockpile).
- Minimize sediment from stormwater that runs off of stockpiles, using sediment controls (e.g., a sediment barrier or downslope sediment control).

8.G.4.1.6 ***Sediment basins.*** If you intend to install a sediment basin to treat stormwater from your earth-disturbing activities, you must:

- Provide storage for either (1) the 2-year, 24-hour storm, or (2) 3,600 cubic feet per acre drained.
- Prevent erosion of (1) basin embankments using stabilization controls (e.g., erosion control blankets), and (2) the inlet and outlet points of the basin using erosion controls and velocity dissipation devices.

8.G.4.1.7 **Minimize dust.** You must minimize the generation of dust through the appropriate application of water or other dust suppression techniques that minimize pollutants being discharged into surface waters.

8.G.4.1.8 ***Restrictions on use of treatment chemicals.*** If you intend to use sediment treatment chemicals at your site, you are subject to the following minimum requirements:

- Use conventional erosion and sediment controls prior to and after application of chemicals;
- Select chemicals suited to soil type, and expected turbidity, pH, flow rate;
- Minimize the discharge risk from stored chemicals;
- Comply with state/local requirements;
- Use chemicals in accordance with good engineering practices and specifications of chemical supplier;
- Ensure proper training;
- Provide proper SWPPP documentation.

If you plan to use cationic treatment chemicals (as defined in Appendix A), you are ineligible for coverage under this permit, unless you notify your applicable EPA Regional Office in advance and the EPA Regional Office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

8.G.4.1.9 ***Site stabilization requirements for earth-disturbing activities performed for purposes of mine site preparation as defined in 8.G.3.2(a) (i.e., not applicable to construction of staging areas for structures and access roads as defined in 8.G.3.2(b)).*** You must comply with the following stabilization requirements except where the intended function of the site accounts for such disturbed earth (e.g., the earth disturbances will become actively mined, or the controls implemented at the active mining area effectively control the disturbance) (although you are encouraged to do so within the active mining area, where appropriate):

- *Temporary stabilization of disturbed areas.* Stabilization measures must be initiated immediately in portions of the site where earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.G.3.2(a)) have temporarily ceased, but in no case more than 14 days after such activities have temporarily ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 14 days after earth-disturbing activities performed for purposes of mine site preparation has temporarily ceased, temporary vegetative stabilization measures must be initiated as soon as practicable. Until temporary vegetative stabilization is achieved, interim measures such as erosion control blankets with an appropriate seed base and tackifiers must be employed. In areas of the site where earth-disturbing activities performed for purposes of mine site preparation have permanently ceased prior to active mining, temporary stabilization measures must be implemented to minimize mobilization of sediment or other pollutants until active mining activities commence.
- *Final stabilization of disturbed areas.* Stabilization measures must be initiated immediately where earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.G.3.2(a)) have permanently ceased, but in no case more than 14 days after the earth- disturbing activities have permanently ceased. In arid, semi-

arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 14 days after earth-disturbing activities have permanently ceased, final vegetative stabilization measures must be initiated as soon as possible. Until final stabilization is achieved, temporary stabilization measures, such as erosion control blankets with an appropriate seed base and tackifiers, must be used.

8.G.4.2 ***Additional Technology-Based Effluent Limits Applicable Only to the Construction of Staging Areas for Structures and Access Roads.*** The following technology-based effluent limits apply to authorized discharges from earth-disturbing activities associated with the construction of staging areas and the construction of access roads, as defined in Part 8.G.3.2(b). These limits supersede the technology-based limits listed in Part 2.1.2 and Part 8.G.5 of the MSGP. These limits do not apply to earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.G.3.2(a)).

8.G.4.2.1 **Area of *disturbance*.** You must minimize the amount of soil exposed during construction activities.

8.G.4.2.2 ***Erosion and sediment control design requirements***. You must:

- Design, install and maintain effective erosion and sediment controls to minimize the discharge of pollutants from construction activities. Account for the following factors in designing your erosion and sediment controls:
  - The expected amount, frequency, intensity and duration of precipitation;
  - The nature of stormwater discharges and run-on at the site, including factors such as impervious surfaces, slopes and site drainage features;
  - The range of soil particle sizes expected to be present on the site.
- Direct discharges from your stormwater controls to vegetated areas of your site to increase sediment removal and maximize stormwater infiltration, including any natural buffers, unless infeasible. Use velocity dissipation devices if necessary to prevent erosion when directing stormwater to vegetated areas.
- If any stormwater flow becomes or will be channelized at your site, you must design erosion and sediment controls to control both peak flowrates and total stormwater volume to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.
- If you install stormwater conveyance channels, they must be designed to avoid unstabilized areas on the site and to reduce erosion, unless infeasible. In addition, you must minimize erosion of channels and their embankments, outlets, adjacent streambanks, slopes, and downstream waters during discharge conditions through the use of erosion controls and velocity dissipation devices within and along the length of any constructed stormwater conveyance channel, and at any outlet to provide a non-erosive flow velocity.

8.G.4.2.3 **Natural Buffers.** For any stormwater discharges from construction activities within 50 feet of a water of the U.S., you must comply with one of the following compliance alternatives:

1. Provide a 50-foot undisturbed natural buffer between construction activities and the water of the U.S.; or
2. Provide an undisturbed natural buffer that is less than 50 feet supplemented by additional erosion and sediment controls, which in combination, achieve a sediment load reduction that is equivalent to a 50-foot undisturbed natural buffer; or
3. If it is infeasible to provide an undisturbed natural buffer of any size, implement erosion and sediment controls that achieve a sediment load reduction that is equivalent to a 50-foot undisturbed natural buffer.

There are exceptions when buffer requirements do not apply:

- There is no stormwater discharge from construction disturbances to a water of the U.S;
- The natural buffer has already been eliminated by preexisting development disturbances;
- The disturbance is for the construction of a water-dependent structure or construction approved under a CWA section 404 permit;
- For linear construction projects, you are not required to comply with the requirements if there are site constraints provided that, to the extent feasible, you limit disturbances within 50 feet of a water of the U.S. and/or you provide supplemental erosion and sediment controls to treat stormwater discharges from any disturbances within 50 feet of a water of the U.S.

See EPA's industrial stormwater website under "Fact Sheets and Guidance" for information on complying with these alternatives: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities.

8.G.4.2.4 **Soil *or sediment stockpiles***. In addition to the requirements in Part 8.G.4.1.5, you must locate any piles outside of any natural buffers established under Part 8.G.4.2.3.

8.G.4.2.5 ***Sediment basins***. In addition to the requirements in Part 8.G.4.1.6, you must locate sediment basins outside of any surface waters and any natural buffers established under Part 8.G.4.2.3, and you must utilize outlet structures that withdraw water from the surface, unless infeasible.

8.G.4.2.6 ***Native topsoil preservation.*** You must preserve native topsoil removed during clearing, grading, or excavation, unless infeasible. Store topsoil in a manner that will maximize its use in reclamation or final vegetative stabilization (e.g., by keeping the topsoil stabilized with seed or similar measures). This requirement does not apply if the intended function of the disturbed area dictates that topsoil be disturbed or removed.

8.G.4.2.7 ***Steep slopes.*** You must minimize the disturbance of steep slopes. The permit does not prevent or prohibit disturbance on steep slopes.

Depending on site conditions and needs, disturbance on steep slopes may be necessary (e.g., a road cut in mountainous terrain; for grading

steep slopes prior to erecting the mine office). Where steep slope disturbances are necessary, you can minimize the disturbances to steep slopes through the implementation of a number of standard erosion and sediment control practices, such as by phasing disturbances in these areas and using stabilization practices specifically for steep grades.

8.G.4.2.8 ***Soil compaction.*** Where final vegetative stabilization will occur or where infiltration practices will be installed, you must either restrict vehicle/ equipment use in these areas to avoid soil compaction or use soil conditioning techniques to support vegetative growth. Minimizing soil compaction is not required where compacted soil is integral to the functionality of the site.

8.G.4.2.9 ***Dewatering Practices.*** You are prohibited from discharging ground water or accumulated stormwater that is removed from excavations, trenches, foundations, vaults or other similar points of accumulation, unless such waters are first effectively managed by appropriate controls (e.g., sediment basins or sediment traps, sediment socks, dewatering tanks, tube settlers, weir tanks, or filtration systems). Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control. (An uncontaminated discharge is a discharge that meets applicable water quality standards.)

You must also meet the following requirements for dewatering activities:

- Discharge requirements:
  - No discharging visible floating solids or foam;
  - Remove oil, grease and other pollutants from dewatering water via an oil-water separator or suitable filtration device (such as a cartridge filter);
  - Utilize vegetated upland areas of the site, to the extent feasible, to infiltrate dewatering water before discharge. In no case shall waters of the U.S. be considered part of the treatment area;
  - Implement velocity dissipation devices at all points where dewatering water is discharged;
  - Haul backwash water away for disposal or return it to the beginning of the treatment process; and
  - Clean or replace the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.
- Treatment chemical restrictions: If you use polymers, flocculants or other chemicals to treat dewatering water, you must comply with the requirements in Parts 8.G.4.1.8.

8.G.4.2.10 ***Pollution prevention requirements.***

- *Prohibited discharges* (this non-exhaustive list of prohibited non-stormwater discharges is included here as a reminder that only the only authorized non-stormwater discharges are those enumerated in Part 1.2.2):
  - Wastewater from washout of concrete;
  - Wastewater from washout and cleanout of stucco, paint, form

release oils, curing compounds, and other construction materials;

- Fuels, oils, or other pollutants used for operation and maintenance of vehicles or equipment;
- Soaps, solvents, or detergents used in vehicle or equipment washing;
- Toxic or hazardous substances from a spill or other release.

- *Design and location requirements:* Minimize the discharge of pollutants from pollutant sources by:
  - Minimizing exposure;
  - Using secondary containment, spill kits, or other equivalent measures;
  - Locating pollution sources away from surface waters, storm sewer inlets, and drainageways;
  - Cleaning up spills immediately (do not clean by hosing area down).
- *Pollution prevention requirements for wash waters:* Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
- *Pollution prevention requirements for the storage, handling, and disposal of construction products, materials, and wastes:* Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to stormwater. Minimization of exposure is not required in cases where the exposure to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

8.G.4.2.11 ***Site Stabilization requirements for the construction of staging areas for structures and access roads as defined in 8.G.3.2(b***) (i.e., not applicable to earth-disturbing activities performed for purposes of mine site preparation as defined in 8.G.3.2(a)). You must comply with the following stabilization requirements, except where the intended function of the site accounts for such disturbed earth (e.g., the area of construction will become actively mined, or the controls implemented at the active mining area effectively control the disturbance):

- By no later than the end of the next work day after construction work in an area has stopped permanently or temporarily ("temporarily" means the land will be idle for a period of 14 days or more but earth-disturbing activities will resume in the future), immediately initiate stabilization measures;
- If using vegetative measures, by no later than 14 days after initiating stabilization:
  - Seed or plant the area, and provide temporary cover to protect the planted area;
  - Once established, vegetation must be uniform, perennial (if final stabilization), and cover at least 70% of stabilized area based on

density of native vegetation.

- If using non-vegetative stabilization, by no later than 14 days after initiating stabilization:
  - Install or apply all non-vegetative measures;
  - Cover all areas of exposed soil.

Note: For the purposes of this permit, EPA will consider any of the following types of activities to constitute the initiation of stabilization: 1. Prepping the soil for vegetative or non-vegetative stabilization; 2. Applying mulch or other non-vegetative product to the exposed area; 3. Seeding or planting the exposed area; 4. Starting any of the activities in # 1 – 3 on a portion of the area to be stabilized, but not on the entire area; and 5. Finalizing arrangements to have stabilization product fully installed in compliance with the applicable deadline for completing stabilization.

Exceptions:

- Arid, semi-arid (if construction occurs during seasonally dry period), or drought-stricken areas:
  - Within 14 days of stopping construction work in an area, install any necessary non-vegetative stabilization measures;
  - Initiate vegetative stabilization as soon as conditions on the site allow;
  - Document the schedule that will be followed for initiating and completing vegetative stabilization;
  - Plant the area so that within 3 years the 70% cover requirement is met.
- Sites affected by severe storm events or other unforeseen circumstances:
  - Initiate vegetative stabilization as soon conditions on the site allow;
  - Document the schedule that will be followed for initiating and completing vegetative stabilization;
  - Plant the area so that so that within 3 years the 70% cover requirement is met.

8.G.4.3 *Water Quality-Based Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*

The following water quality-based limits apply to earth-disturbing activities conducted prior to active mining activities defined in Part 8.G.3.2(a) and 8.G.3.2(b), in addition to the water quality-based limits in Part 2.2 of the MSGP.

Stricter requirements apply if your site will discharge to an impaired water or a water that is identified by your state, tribe, or EPA as a Tier 2 or Tier 2.5 for antidegradation purposes:

- More rapid stabilization of exposed areas: Complete initial stabilization activities within 7 days of stopping earth-disturbing work.
- More frequent site inspections: Once every 7 days and within 24 hours of a storm event of 0.25 inches or greater.

8.G.4.4 *Inspection Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*

The following requirements supersede the inspection requirements in Part 3 and 8.G.7 of the MSGP for earth-disturbing activities conducted prior to active mining activities defined in Part 8.G.3.2(a) and 8.G.3.2(b).

8.G.4.4.1 Inspection frequency

- At least once every 7 calendar days, or
- Once every 14 calendar days and within 24 hours of a storm event of 0.25 inches or greater.

Note:

- Inspections only required during working hours;
- Inspections not required during unsafe conditions; and
- If you choose to inspect once every 14 days, you must have a method for measuring rainfall amount on site (either rain gauge or representative weather station)

Note: To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that day.

Note: You are required to specify in your SWPPP which schedule you will be following.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if you have elected to inspect bi-weekly and there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

8.G.4.4.2 Reductions in inspection frequency.

- Stabilized areas: You may reduce the frequency of inspections to once per month in any area of your site where stabilization has occurred pursuant to Part 8.G.4.1.9 or 8.G.4.2.11.
- Arid, semi-arid, and drought stricken areas: If earth-disturbing activities are occurring during the seasonally dry period or during a period in which drought is predicted to occur, you may reduce inspections to once per month and within 24 hours of a 0.25 inch storm event.
- Frozen conditions: You may temporarily suspend or reduce inspections to once per month until thawing conditions occur if frozen conditions are continuous and disturbed areas have been stabilized. For extreme conditions in remote areas, e.g., where transit to the site is perilous/restricted or temperatures are routinely below freezing, you may suspend inspections until the conditions are conducive to safe access, and more frequent inspections can resume.

8.G.4.4.3 **Areas to be inspected.** You must at a minimum inspect the all of the following areas:

- Disturbed areas;
- Stormwater controls and pollution prevention measures;
- Locations where stabilization measures have been implemented;
- Material, waste, borrow, or equipment storage and maintenance areas;
- Areas where stormwater flows;
- Points of discharge.

8.G.4.4.4 ***What to check for during inspections.*** At a minimum you must check:

- Whether all stormwater controls are installed, operational and working as intended;
- Whether any new or modified stormwater controls are needed;
- For conditions that could lead to a spill or leak;
- For visual signs of erosion/sedimentation at points of discharge.

If a discharge is occurring, check:

- The quality and characteristics of the discharge;
- Whether controls are operating effectively.

8.G.4.4.5 **Inspection report.** Within 24 hours of an inspection, complete a report that includes:

- Inspection date;
- Name and title of inspector(s);
- Summary of inspection findings;
- Rainfall amount that triggered the inspection (if applicable);
- If it was unsafe to inspect a portion of the site, include documentation of the reason and the location(s);
- Each inspection report must be signed;
- Keep a current copy of all reports at the site or at an easily accessible location.

8.G.5 Technology-Based Effluent Limits for Active Mining Activities

Note: These requirements do not apply for any discharges from earth-disturbing activities conducted prior to active mining as defined in 8.G.3.2(a) or 8.G.3.2(b).

8.G.5.1 ***Employee training***. (See also Part 2.1.2.8) Conduct employee training at least annually at active and temporarily inactive facilities.

8.G.5.2 ***Stormwater controls.*** Apart from the control measures you implement to meet your Part 2 technology-based effluent limits, where necessary to minimize pollutant discharges in stormwater, implement the following control measures at your site. The potential pollutants identified in Part 8.G.6.3 shall determine the priority and appropriateness of the control measures selected. For mines subject to dust control requirements under state or county air quality permits, provided the requirements are equivalent, compliance with such air permit dust requirements shall constitute compliance with the dust control effluent limit in Part 2.1.2.10.

Stormwater diversions: Divert stormwater away from potential pollutant sources through implementation of control measures such as the following, where determined to be feasible (list not exclusive): interceptor or diversion controls (e.g., dikes, swales, curbs, berms); pipe slope drains; subsurface drains; conveyance systems (e.g., channels or gutters, open-top box culverts, and waterbars; rolling dips and road sloping; roadway surface water deflector and culverts); or their equivalents.

Capping: When capping is necessary to minimize pollutant discharges in stormwater, identify the source being capped and the material used to construct the cap.

Treatment: If treatment of stormwater (e.g., chemical or physical systems, oil - water separators, artificial wetlands) is necessary to protect water quality, describe the type and location of treatment used. Passive and/or active treatment of stormwater is encouraged, where feasible. Treated stormwater may be discharged as a stormwater source regulated under this permit provided the discharge is not combined with discharges subject to effluent limitation guidelines for the Ore Mining and Dressing Point Source Category (40 CFR Part 440).

8.G.5.3 ***Discharge testing.*** (See also Part 6.2.3.4) Test or evaluate all discharge points covered under this permit for the presence of specific mining-related but unauthorized non-stormwater discharges such as seeps or adit discharges, or discharges subject to effluent limitations guidelines (e.g., 40 CFR Part 440), such as mine drainage or process water. Alternatively (if applicable), you may keep a certification with your SWPPP consistent with Part 8.G.6.6.

8.G.6 Additional SWPPP Requirements for Mining Operations

Note: The requirements in Part 8.G.6 are not applicable to inactive metal mining facilities.

8.G.6.1 ***Nature of industrial activities***. (See also Part 6.2.2) Briefly document in your SWPPP the mining and associated activities that can potentially affect the stormwater discharges covered by this permit, including a general description of the location of the site relative to major transportation routes and communities.

8.G.6.2 ***Site map***. (See also Part 6.2.2) Document in your SWPPP the locations of the following (as appropriate): mining or milling site boundaries; access and haul roads; outline of the drainage areas of each stormwater discharge points within the facility with indications of the types of discharges from the drainage areas; location(s) of all permitted discharges covered under an individual NPDES permit; outdoor equipment storage, fueling, and maintenance areas; materials handling areas; outdoor manufacturing, outdoor storage, and material disposal areas; outdoor chemicals and explosives storage areas; overburden, materials, soils, or waste storage areas; location of mine drainage (where water leaves mine) or other process water; tailings piles and ponds (including proposed ones); heap leach pads; off-site points of discharge for mine drainage and process water; surface waters; boundary of tributary areas that are subject to effluent limitations guidelines; and location(s) of reclaimed areas.

8.G.6.3 ***Potential pollutant sources.*** (See also Part 6.2.3) For each area of the mine or mill site where stormwater discharges associated with industrial activities occur, identify the types of pollutants (e.g., heavy metals, sediment) likely to be present in significant amounts. Consider these factors: the mineralogy of the ore and waste rock (e.g.,

acid forming); toxicity and quantity of chemicals used, produced, or discharged; the likelihood of contact with stormwater; vegetation of site (if any); and history of significant leaks or spills of toxic or hazardous pollutants. Also include a summary of any existing ore or waste rock or overburden characterization data and test results for potential generation of acid rock. If any new data is acquired due to changes in ore type being mined, update your SWPPP with this information.

8.G.6.4 ***Documentation of control measures.*** Document all control measures that you implement consistent with Part 8.G.5.2. If control measures are implemented or planned but are not listed in Part 8.G.5.2 (e.g., substituting a less toxic chemical for a more toxic one), include descriptions of them in your SWPPP. If you are in compliance with dust control requirements under state or county air quality permits, you must include (or summarize, as necessary) what the state or county air quality permit dust control requirements are and how you've achieved compliance with them.

8.G.6.5 ***Employee training***. All employee training(s) must be documented in the SWPPP.

8.G.6.6 ***Certification of permit coverage for commingled non-stormwater discharges***. If you are able, consistent with Part 8.G.5.3 above, to certify that a particular discharge composed of commingled stormwater and non-stormwater is covered under a separate NPDES permit, and that permit subjects the non-stormwater portion to effluent limitations prior to any commingling, retain such certification with your SWPPP. This certification must identify the non-stormwater discharges, the applicable NPDES permit(s), the effluent limitations placed on the non-stormwater discharge by the permit(s), and the points at which the limitations are applied.

8.G.7 Additional Inspection Requirements *(See also Part 3.1)*

Except for earth-disturbing activities conducted prior to active mining activities as defined in Part 8.G.3.2(a) and 8.G.3.2(b), which are subject to Part 8.G.4.4, inspect sites at least quarterly unless adverse weather conditions make the site inaccessible. Sites which discharge to waters designated as Tier 2 or 2.5 or waters which are impaired for sediment or nitrogen must be inspected monthly. See Part 8.G.8.5 for inspection requirements for inactive and unstaffed sites.

8.G.8 Monitoring and Reporting Requirements (See also Part 4)

Note: There are no Part 8.G.8 monitoring and reporting or impaired waters monitoring requirements for inactive and unstaffed sites.

8.G.8.1 Indicator Monitoring (See also Part 4.2.1)

Table 8.G-1 identifies indicator monitoring that applies to the specific subsectors of Sector G. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.G-1		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Indicator Monitoring Parameter**	**Indicator Monitoring Threshold**
Applies to all Sector G (Subsectors G1 and G2) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.G.8.2 *Benchmark Monitoring for Active Copper Ore Mining and Dressing Facilities.*

Table 8.G-2 identifies benchmarks that apply to active copper ore mining and dressing facilities. These benchmarks apply to both your primary industrial activity and any co- located industrial activities.

Table 8.G-2		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector G1. Active Copper Ore Mining and Dressing Facilities (SIC 1021)	Total Suspended Solids (TSS)	100 mg/L
	Nitrate plus Nitrite Nitrogen	0.68 mg/L
	Chemical Oxygen Demand (COD)	120 mg/L

8.G.8.3 ***Benchmark Monitoring Requirements for Discharges From Waste Rock and Overburden Piles at Active Metal Mining Facilities.*** For discharges from waste rock and overburden piles, perform benchmark monitoring once in the first year for the parameters listed in Table 8.G-3, and twice annually in all subsequent years of coverage under this permit for any parameters for which the benchmark has been exceeded. You are also required to conduct analytic monitoring for the parameters listed in Table 8.G-4 in accordance with the requirements in Part 8.G.8.4. The Director may also notify you that you must perform additional monitoring to accurately characterize the quality and quantity of pollutants discharged from your waste rock and overburden piles.

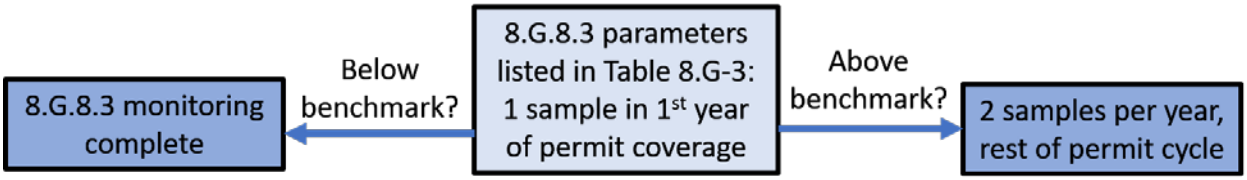

Table 8.G-3.		
Subsector (Discharges may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector G2. Iron Ores; Copper Ores; Lead and Zinc Ores; Gold and Silver Ores; Ferroalloy Ores, Except Vanadium; and Miscellaneous Metal Ores (SIC Codes 1011, 1021, 1031, 1041, 1044, 1061, 1081, 1094, 1099) (Note: when analyzing hardness for a suite of metals, it is more cost effective to add analysis of calcium and magnesium, and have hardness calculated than to require hardness analysis separately)	Total Suspended Solids (TSS)	100 mg/L
	Turbidity	50 NTU
	pH	6.0-9.0 s.u.
	Hardness (as $CaCO_3$; calc. from Ca, Mg)[2]	no benchmark value
	Total Recoverable Antimony	640 µg/L
	Total Recoverable Arsenic (freshwater) Total Recoverable Arsenic (saltwater)[1]	150 µg/L 69 µg/L
	Total Recoverable Beryllium	130 µg/L
	Total Recoverable Cadmium (freshwater)[2] Total Recoverable Cadmium (saltwater)[1]	Hardness Dependent 33 µg/L
	Total Recoverable Copper (freshwater) Total Recoverable Copper (saltwater)[1]	5.19 µg/L 4.8 µg/L
	Total Recoverable Lead (freshwater)[2] Total Recoverable Lead (saltwater)[1]	Hardness Dependent 210 µg/L
	Total Recoverable Mercury (freshwater) Total Recoverable Mercury (saltwater)[1]	1.4 µg/L 1.8 µg/L
	Total Recoverable Nickel (freshwater)[2] Total Recoverable Nickel (saltwater)[1]	Hardness Dependent 74 µg/L
	Total Recoverable Selenium (freshwater) Total Recoverable Selenium (saltwater)[1]	1.5 µg/L for still/standing (lentic) waters; 3.1 µg/L for flowing (lotic) waters 290 µg/L
	Total Recoverable Silver (freshwater)[2] Total Recoverable Silver (saltwater)[1]	Hardness Dependent 1.9 µg/L
	Total Recoverable Zinc (freshwater)[2] Total Recoverable Zinc (saltwater)[1]	Hardness Dependent 90 µg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.

[2]The freshwater benchmark values of some metals are dependent on water hardness. For these parameters,

permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 4.2.2.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	**Cadmium** (µg/L)		**Lead** (µg/L)	**Nickel** (µg/L)	**Silver** (µg/L)	**Zinc** (µg/L)
0-24.99 mg/L	0.49		14	145	0.37	37
25-49.99 mg/L	0.73		24	203	0.80	52
50-74.99 mg/L	1.2		45	314	1.9	80
75-99.99 mg/L	1.7		69	418	3.3	107
100-124.99 mg/L	2.1		95	518	5.0	132
125-149.99 mg/L	2.6		123	614	7.1	157
150-174.99 mg/L	3.1		152	707	9.4	181
175-199.99 mg/L	3.5		182	798	12	204
200-224.99 mg/L	4.0		213	888	15	227
225-249.99 mg/L	4.4		246	975	18	249
250+ mg/L	4.7		262	1019	20	260

8.G.8.4 ***Additional Analytic Monitoring Requirements for Discharges From Waste Rock and Overburden Piles at Active Metal Mining Facilities.*** In addition to the monitoring required in Part 8.G.8.3 for discharges from waste rock and overburden piles, you must also conduct monitoring for additional parameters based on the type of ore you mine at your site. The schedule for monitoring for this Part 8.G.8.4 is the same as specified in Part 8.G.8.3: once in the first year for the parameters listed in Table 8.G-4 (except radium and uranium), and twice annually in all subsequent years of coverage under this permit for any parameters for which the benchmark has been exceeded. Where a parameter in Table 8.G-4 is the same as a pollutant you are required to monitor for in Table 8.G-3 (i.e., for all of the metals), you must use the corresponding benchmark in Table 8.G-3 and you may use any monitoring results conducted for Part 8.G.8.3 to satisfy the monitoring requirement for that parameter for Part 8.G.8.4. For radium and uranium, which do not have corresponding benchmarks in Table 8.G-3, there are no applicable benchmarks. For radium and uranium, you must monitor quarterly (as identified in Part 4.1.7) for your first four full quarters of permit coverage commencing no earlier than [insert 90 days after permit effective date], after which you may discontinue monitoring for these two parameters.

Table 8.G-4. Additional Monitoring Requirements for Discharges from Waste Rock and Overburden Piles

Supplemental Requirements			
Type of Ore Mined	**Pollutants of Concern**		
	Total Suspended Solids (TSS)	**pH**	**Metals, Total**
Tungsten Ore	X	X	Arsenic, Cadmium (H), Copper, Lead (H), Zinc (H)
Nickel Ore	X	X	Arsenic, Cadmium (H), Copper, Lead (H), Zinc (H)
Aluminum Ore	X	X	Iron
Mercury Ore	X	X	Nickel (H)
Iron Ore	X	X	Iron (Dissolved)

Table 8.G-4. Additional Monitoring Requirements for Discharges from Waste Rock and Overburden Piles			
Supplemental Requirements			
Type of Ore Mined	**Pollutants of Concern**		
	Total Suspended Solids (TSS)	**pH**	**Metals, Total**
Platinum Ore			Cadmium (H), Copper, Mercury, Lead (H), Zinc (H)
Titanium Ore	X	X	Iron, Nickel (H), Zinc (H)
Vanadium Ore	X	X	Arsenic, Cadmium (H), Copper, Lead (H), Zinc (H)
Molybdenum	X	X	Arsenic, Cadmium (H), Copper, Lead (H), Mercury, Zinc (H)
Uranium, Radium, and Vanadium Ore	X	X	Chemical Oxygen Demand, Arsenic, Radium (Dissolved and Total), Uranium, Zinc (H)

Note: An "X" indicated for TSS and/or pH means that you are required to monitor for those parameters. (H) indicates that hardness must also be measured when this pollutant is measured.

8.G.8.5 ***Inactive and Unstaffed Sites – Conditional Exemption from No Exposure Requirements for Quarterly Visual Assessments and Routine Facility Inspections.*** As a Sector G facility, if you are seeking to exercise a waiver from the quarterly visual assessment and routine facility inspection requirements for inactive and unstaffed sites (including temporarily inactive sites), you are conditionally exempt from the requirement to certify that "there are no industrial materials or activities exposed to stormwater" in Parts 3.1.5 and 3.2.4.4. This exemption is conditioned on the following:

- If circumstances change and your facility becomes active and/or staffed, this exception no longer applies and you must immediately begin complying with the quarterly visual assessment requirements; and
- EPA retains the authority to revoke this exemption and/or the monitoring waiver where it is determined that the discharge causes, has a reasonable potential to cause, or contributes to an instream excursion above an applicable water quality standard, including designated uses.

Subject to the two conditions above, if your facility is inactive and unstaffed, you are waived from the requirement to conduct quarterly visual assessments and routine facility inspections. You must still do an annual site inspection in accordance with Part 3.1. You are encouraged to inspect your site more frequently where you have reason to believe that severe weather or natural disasters may have damaged control measures or increased discharges.

Table 8.G-5. Applicability of the Multi-Sector General Permit to Stormwater From Active Mining and Dressing Sites, Temporarily Inactive Sites, and Sites Undergoing Reclamation	
Discharge/Source of Discharge	**Note/Comment**
Piles	
Waste rock/overburden	Covered under the MSGP if composed entirely of stormwater and not combined with mine drainage. See note below.
Topsoil	--

Table 8.G-5. Applicability of the Multi-Sector General Permit to Stormwater From Active Mining and Dressing Sites, Temporarily Inactive Sites, and Sites Undergoing Reclamation	
Discharge/Source of Discharge	**Note/Comment**
Roads constructed of waste rock or spent ore	
Onsite haul roads	Covered under the MSGP if composed entirely of stormwater and not combined with mine drainage. See note below.
Offsite haul and access roads	--
Roads not constructed of waste rock or spent ore	
Onsite haul roads	Covered under the MSGP except if mine drainage is used for dust control.
Offsite haul and access roads	--
Milling/concentrating	
Runoff from tailings dams and dikes when constructed of waste rock/tailings	Covered under the MSGP except if process fluids are present and only if composed entirely of stormwater and not combined with mine drainage. See Note below.
Runoff from tailings dams/dikes when not constructed of waste rock and tailings	Covered under the MSGP except if process fluids are present.
Concentration building	Covered under the MSGP If stormwater only and no contact with piles.
Mill site	If stormwater only and no contact with piles.
Ancillary areas	
Office and administrative building and housing	Covered under the MSGP if mixed with stormwater from the industrial area.
Chemical storage area	--
Docking facility	Covered under the MSGP except if excessive contact with waste product that would otherwise constitute mine drainage.
Explosive storage	--
Fuel storage (oil tanks/coal piles)	--
Vehicle and equipment maintenance area/building	--
Parking areas	Covered under the MSGP but coverage unnecessary if only employee and visitor-type parking.
Power plant	
Truck wash area	Covered under the MSGP except when excessive contact with waste product that would otherwise constitute mine drainage.
Reclamation-related areas	
Any disturbed area (unreclaimed)	Covered under the MSGP only if not in active mining area.
Reclaimed areas released from reclamation requirements prior to Dec. 17, 1990	--
Partially/inadequately reclaimed areas or areas not released from reclamation requirements	--

Note: Stormwater from these sources are subject to the NPDES program for stormwater unless mixed with discharges subject to 40 CFR Part 440 that are regulated by another permit prior to mixing. Non-stormwater

discharges from these sources are subject to NPDES permitting and may be subject to the effluent limitation guidelines under 40 CFR Part 440. Discharges from overburden/waste rock and overburden/waste rock-related areas are not subject to 40 CFR Part 440 unless: (1) it drains naturally (or is intentionally diverted) to a point source; and (2) combines with "mine drainage" that is otherwise regulated under the Part 440 regulations. For such sources, coverage under this permit would be available if the discharge composed entirely of stormwater does not combine with other sources of mine drainage that are not subject to 40 CFR Part 440, as well as meeting other eligibility criteria contained in Part 1.1 of the permit.

Operators bear the initial responsibility for determining the applicable technology-based standard for such discharges. EPA recommends that operators contact the relevant NPDES permit issuance authority for assistance to determine the nature and scope of the "active mining area" on a mine-by-mine basis, as well as to determine the appropriate permitting mechanism for authorizing such discharges.

8.G.9 Termination of Permit Coverage

8.G.9.1 ***Termination of Permit Coverage for Sites Reclaimed After December 17, 1990***. A site or a portion of a site that has been released from applicable state or federal reclamation requirements after December 17, 1990, is no longer required to maintain coverage under this permit. If the site or portion of a site reclaimed after December 17, 1990, was not subject to reclamation requirements, the site or portion of the site is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed as defined in Part 8.G.3.3.

8.G.9.2 ***Termination of Permit Coverage for Sites Reclaimed Before December 17, 1990.*** A site or portion of a site that was released from applicable state or federal reclamation requirements before December 17, 1990, or that was otherwise reclaimed before December 17, 1990, is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed. A site or portion of a site is considered to have been reclaimed if: (1) stormwater that comes into contact with raw materials, intermediate byproducts, finished products, and waste products does not have the potential to cause or contribute to violations of state water quality standards, soil disturbing activities related to mining at the sites or portion of the site have been completed, (3) the site or portion of the site has been stabilized to minimize soil erosion, and (4) as appropriate depending on location, size, and the potential to contribute pollutants to stormwater discharges, the site or portion of the site has been revegetated, will be amenable to natural revegetation, or will be left in a condition consistent with the post-mining land use.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart H – Sector H – Coal Mines and Coal Mining-Related Facilities

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

Note: Where compliance with a requirement in a separate exploration permit, mining permit, reclamation plan, Surface Mining Control and Reclamation Act (SMCRA) requirements, etc. will result in you fully meeting any requirement in this Subpart, you are considered to have complied with the relevant requirement in this Subpart. You must include documentation in your SWPPP describing your rationale for concluding that any particular action on your part is sufficient to comply with the corresponding requirement in this Subpart.

8.H.1 Covered Stormwater Discharges

The requirements in Subpart H apply to stormwater discharges associated with industrial activity from Coal Mines and Coal Mining-Related facilities as identified by the SIC Codes specified under Sector H in Table D-1 of Appendix D.

8.H.2 Limitations on Coverage

8.H.2.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.3) Not covered by this permit: discharges from pollutant seeps or underground drainage from inactive coal mines and refuse disposal areas that do not result from precipitation events, and discharges from floor drains in maintenance buildings and other similar drains in mining and preparation plant areas. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2).

8.H.2.2 ***Discharges Subject to Stormwater Effluent Guidelines.*** (See also Part 1.2.1.4) Not authorized by this permit: stormwater discharges subject to an existing effluent limitation guideline at 40 CFR Part 434.

8.H.3 Definitions

The following definitions are not intended to supersede the definitions of active and inactive mining facilities established by 40 CFR 122.26(b)(14)(iii).

8.H.3.1 ***Mining operations*** - For this permit, mining operations are grouped into two distinct categories, with distinct effluent limits and requirements applicable to each: a) earth-disturbing activities conducted prior to active mining activities); and b) active mining activities, which includes reclamation. "Mining operations" can occur at both inactive mining facilities and temporarily inactive mining facilities.

8.H.3.2 ***Earth-disturbing activities conducted prior to active mining activities*** – Consists of two classes of earth-disturbing (i.e., clearing, grading and excavation) activities:

a. Activities performed for purposes of mine site preparation, including: cutting new rights of way (except when related to access road construction); providing access to a mine site for vehicles and equipment (except when related to access road construction); other earth disturbances associated with site preparation

activities on any areas where active mining activities have not yet commenced (e.g., for heap leach pads, waste rock facilities, tailings impoundments, wastewater treatment plants); and

b. Construction of staging areas to prepare for erecting structures such as to house project personnel and equipment, mill buildings, etc., and construction of access roads. Earth-disturbing activities associated with the construction of staging areas and the construction of access roads conducted prior to active mining are considered to be "construction" and have additional effluent limits in Part 8.H.4.2.

8.H.3.3 ***Active mining activities*** – Activities related to the extraction, removal or recovery, and preparation of coal; removal of overburden and waste rock to expose mineable minerals; and site reclamation and closure activities. All such activities occur within the "active mining area." Reclamation involves activities undertaken, in compliance with applicable mined land reclamation requirements, to return the land to an appropriate post-mining contour and land use in order to meet applicable federal and state reclamation requirements. In addition, once earth-disturbing activities conducted prior to active mining activities have ceased and all related requirements in Part 8.H.4 have been met, and a well-delineated "active mining area" has been established, all activities (including any clearing, grading, and excavation) that occur within the active mining area are "active mining activities."

8.H.3.4 ***Active mining area*** – A place where work or other activity related to the extraction, removal or recovery of coal is being conducted, except, with respect to surface mines, any area of land on or in which grading has been completed to return the earth to desired contour and reclamation work has begun.

Note: Earth-disturbing activities described in the definition in Part 8.H.3.2 that occur on areas outside the active mining area (e.g., for expansion of the mine into undeveloped territory) are considered "earth-disturbing conducted prior to active mining activities", and must comply with the requirements in Part 8.H.4.

8.H.3.5 ***Inactive coal mining facility*** – A site or portion of a site where coal mining and/or milling occurred in the past but there are no active mining operations occurring as defined above, and where the inactive portion is not covered by an active mining permit issued by the applicable state or federal agency. An inactive coal mining facility has an identifiable owner / operator. Sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials and sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim are not considered either active or inactive mining facilities and do not require an NPDES industrial stormwater permit.

8.H.3.6 ***Temporarily inactive coal mining facility*** – A site or portion of a site where coal mining and/or milling occurred in the past but currently are not being actively undertaken, and the facility is covered by an active mining permit issued by the applicable state or federal agency.

8.H.4 Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities

Stormwater discharges from earth-disturbing activities conducted prior to active mining activities (defined in Part 8.H.3.2) are covered under this permit. For such earth-disturbing activities, you must comply with all applicable requirements in Parts 1-9 of the MSGP except for the

technology-based effluent limits in Part 8.H.5 and Part 2.1.2, the inspection requirements in Part 8.H.7 and Part 3, and the monitoring requirements in Part 8.H.8 and Part 4.

Authorized discharges from areas where earth-disturbing activities have ceased and stabilization as specified in Part 8.H.4.19 or 8.H.4.2.11, where appropriate, has been completed (stabilization is not required for areas where active mining activities will occur), are no longer subject to the Part 8.H.4 requirements. At such time, authorized discharges become subject to all other applicable requirements in the MSGP, including the effluent limits in Parts 2.1.2 and 8.H.5, the inspection requirements in Parts 3 and 8.H.7, and the monitoring requirements in Parts 4, 8.H.8, and 8.H.9.

8.H.4.1 ***Technology-Based Effluent Limits Applicable to All Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*** The following technology-based effluent limits apply to authorized discharges from all earth-disturbing activities conducted prior to active mining activities defined in Parts 8.H.3.2(a) and 8.H.3.2(b). These limits supersede the technology-based limits listed in Part 2.1.2 and Part 8.H.5 of the MSGP.

8.H.4.1.1 ***Erosion and sediment control installation requirements.***

- By the time construction activities commence, install and make operational downgradient sediment controls, unless this timeframe is infeasible. If infeasible you must install and make such controls operational as soon as practicable or as soon as site conditions permit.
- All other stormwater controls described in the SWPPP must be installed and made operational as soon as conditions on each portion of the site allows.

8.H.4.1.2 ***Erosion and sediment control maintenance requirements***. You must:

- Ensure that all erosion and sediment controls remain in effective operating condition.
- Wherever you determine that a stormwater control needs maintenance to continue operating effectively, initiate efforts to fix the problem immediately after its discovery, and complete such work by the end of the next work day.
- When a stormwater control must be replaced or significantly repaired, complete the work within 7 days, unless infeasible. If 7 days is infeasible, you must complete the installation or repair as soon as practicable.

8.H.4.1.3 ***Perimeter controls.*** You must:

- Install sediment controls along those perimeter areas of your disturbed area that will receive stormwater, except where site conditions prevent the use of such controls (in which case, maximize their installation to the extent practicable).
- Remove sediment before it accumulates to one-half of the above-ground height of any perimeter control.

8.H.4.1.4 **Sediment track-out.** For construction vehicles and equipment exiting the site directly onto paved roads, you must:

- Use appropriate stabilization techniques to minimize sediment track-out from vehicles and equipment prior to exit;
- Use additional controls to remove sediment from vehicle and equipment tires prior to exit, where necessary;

- Remove sediment that is tracked out onto paved roads by end of the work day.

Note: EPA recognizes that some fine grains may remain visible on the surfaces of off-site streets, other paved areas, and sidewalks even after you have implemented sediment removal practices. Such "staining" is not a violation of Part 8.H.4.1.4.

8.H.4.1.5 ***Soil or sediment stockpiles.*** You must:

- Minimize erosion of stockpiles from stormwater and wind via temporary cover, if feasible.
- Prevent up-slope stormwater flows from causing erosion of stockpiles (e.g., by diverting flows around the stockpile).
- Minimize sediment from stormwater that runs off of stockpiles, using sediment controls (e.g., a sediment barrier or downslope sediment control).

8.H.4.1.6 ***Sediment basins.*** If you intend to install a sediment basin to treat stormwater from your earth-disturbing activities, you must:

- Provide storage for either (1) the 2-year, 24-hour storm, or (2) 3,600 cubic feet per acre drained.
- Prevent erosion of (1) basin embankments using stabilization controls (e.g., erosion control blankets), and (2) the inlet and outlet points of the basin using erosion controls and velocity dissipation devices.

8.H.4.1.7 ***Minimize dust.*** You must minimize the generation of dust through the appropriate application of water or other dust suppression techniques that minimize pollutants being discharged into surface waters.

8.H.4.1.8 **Restrictions on use of treatment chemicals.** If you intend to use sediment treatment chemicals at your site, you are subject to the following minimum requirements:

- Use conventional erosion and sediment controls prior to and after application of chemicals;
- Select chemicals suited to soil type, and expected turbidity, pH, flow rate;
- Minimize the discharge risk from stored chemicals;
- Comply with state/local requirements;
- Use chemicals in accordance with good engineering practices and specifications of chemical supplier;
- Ensure proper training;
- Provide proper SWPPP documentation.

If you plan to use cationic treatment chemicals (as defined in Appendix A), you are ineligible for coverage under this permit, unless you notify your applicable EPA Regional Office in advance and the EPA Regional Office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

8.H.4.1.9 ***Site stabilization requirements for earth-disturbing activities performed for purposes of mine site preparation as defined in 8.H.3.2(a)*** (i.e., not applicable to construction of staging areas for structures and access roads as defined in 8.H.3.2(b)). You must comply with the following stabilization requirements except where the intended function of the site accounts for such disturbed earth (e.g., the earth disturbances will become actively mined, or the controls implemented at the active mining area effectively control the disturbance):

- *Temporary stabilization of disturbed areas.* Stabilization measures must be initiated immediately in portions of the site where earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.H.3.2(a)) have temporarily ceased, but in no case more than 14 days after such activities have temporarily ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 14 days after earth-disturbing activities performed for purposes of mine site preparation has temporarily ceased, temporary vegetative stabilization measures must be initiated as soon as practicable. Until temporary vegetative stabilization is achieved, interim measures such as erosion control blankets with an appropriate seed base and tackifiers must be employed. In areas of the site where earth-disturbing activities performed for purposes of mine site preparation have permanently ceased prior to active mining, temporary stabilization measures must be implemented to minimize mobilization of sediment or other pollutants until active mining activities commence.
- *Final stabilization of disturbed areas.* Stabilization measures must be initiated immediately where earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.H.3.2(a)) have permanently ceased, but in no case more than 14 days after the earth- disturbing activities have permanently ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 14 days after earth-disturbing activities have permanently ceased, final vegetative stabilization measures must be initiated as soon as possible. Until final stabilization is achieved, temporary stabilization measures, such as erosion control blankets with an appropriate seed base and tackifiers, must be used.

8.H.4.2 ***Additional Technology-Based Effluent Limits Applicable Only to the Construction of Staging Areas for Structures and Access Roads.*** The following technology-based effluent limits apply to authorized discharges from earth-disturbing activities associated with the construction of staging areas and the construction of access roads, as defined in Part 8.H.3.2(b). These limits supersede the technology-based limits listed in Part 2.1.2 and Part 8.H.5 of the MSGP. These limits do not apply to earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.H.3.2(a)).

8.H.4.2.1 ***Area of disturbance.*** You must minimize the amount of soil exposed during construction activities.

8.H.4.2.2 ***Erosion and sediment control design requirements.*** You must:

- Design, install and maintain effective erosion and sediment controls to minimize the discharge of pollutants from construction activities. Account for the following factors in designing your erosion and sediment controls:
- The expected amount, frequency, intensity and duration of precipitation;
- The nature of stormwater discharges and run-on at the site, including factors such as impervious surfaces, slopes and site drainage features;
- The range of soil particle sizes expected to be present on the site.
- Direct discharges from your stormwater controls to vegetated areas of your site to increase sediment removal and maximize stormwater infiltration, including any natural buffers, unless infeasible. Use velocity dissipation devices if necessary to prevent erosion when directing stormwater to vegetated areas.
- If any stormwater flow becomes or will be channelized at your site, you must design erosion and sediment controls to control both peak flowrates and total stormwater volume to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.
- If you install stormwater conveyance channels, they must be designed to avoid unstabilized areas on the site and to reduce erosion, unless infeasible. In addition, you must minimize erosion of channels and their embankments, outlets, adjacent streambanks, slopes, and downstream waters during discharge conditions through the use of erosion controls and velocity dissipation devices within and along the length of any constructed stormwater conveyance channel, and at any outlet to provide a non-erosive flow velocity.

8.H.4.2.3 ***Natural Buffers.*** For any stormwater discharges from construction activities within 50 feet of a water of the U.S., you must comply with one of the following compliance alternatives:

1. Provide a 50-foot undisturbed natural buffer between construction activities and the water of the U.S.; or

2. Provide an undisturbed natural buffer that is less than 50 feet supplemented by additional erosion and sediment controls, which in combination, achieve a sediment load reduction that is equivalent to a 50-foot undisturbed natural buffer; or

3. If it is infeasible to provide an undisturbed natural buffer of any size, implement erosion and sediment controls that achieve a sediment load reduction that is equivalent to a 50-foot undisturbed natural buffer.

There are exceptions when buffer requirements do not apply:

- There is no stormwater discharge from construction disturbances to a water of the U.S;
- The natural buffer has already been eliminated by preexisting development disturbances;

- The disturbance is for the construction of a water-dependent structure or construction approved under a CWA section 404 permit;
- For linear construction projects, you are not required to comply with the requirements if there are site constraints provided that, to the extent feasible, you limit disturbances within 50 feet of a water of the U.S. and/or you provide supplemental erosion and sediment controls to treat stormwater discharges from any disturbances within 50 feet of a water of the U.S.

See EPA's industrial stormwater website under "Fact Sheets and Guidance" for information on complying with these alternatives: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities.

8.H.4.2.4 ***Soil or sediment stockpiles.*** In addition to the requirements in Part 8.H.4.1.5, you must locate any piles outside of any natural buffers established under Part 8.H.4.2.3.

8.H.4.2.5 ***Sediment basins.*** In addition to the requirements in Part 8.H.4.1.6, you must locate sediment basins outside of any surface waters and any natural buffers established under Part 8.H.4.2.3, and you must utilize outlet structures that withdraw water from the surface, unless infeasible.

8.H.4.2.6 ***Native topsoil preservation.*** *You must preserve native topsoil removed during clearing, grading, or excavation, unless infeasible. Store topsoil in a manner that will maximize its use in reclamation or final vegetative stabilization (e.g., by keeping the topsoil stabilized with seed or similar measures). This requirement does not apply if the intended function of the disturbed area dictates that topsoil be disturbed or removed.*

8.H.4.2.7 ***Steep slopes.*** You must minimize the disturbance of steep slopes. The permit does not prevent or prohibit disturbance on steep slopes.

Depending on site conditions and needs, disturbance on steep slopes may be necessary (e.g., a road cut in mountainous terrain; for grading steep slopes prior to erecting the mine office). Where steep slope disturbances are necessary, you can minimize the disturbances to steep slopes through the implementation of a number of standard erosion and sediment control practices, such as by phasing disturbances in these areas and using stabilization practices specifically for steep grades.

8.H.4.2.8 ***Soil compaction.*** Where final vegetative stabilization will occur or where infiltration practices will be installed, you must either restrict vehicle/equipment use in these areas to avoid soil compaction or use soil conditioning techniques to support vegetative growth. Minimizing soil compaction is not required where compacted soil is integral to the functionality of the site.

8.H.4.2.9 ***Dewatering Practices****. You are prohibited from discharging ground water or accumulated stormwater that is removed from excavations, trenches, foundations, vaults or other similar points of accumulation, unless such waters are first effectively managed by appropriate controls (e.g., sediment basins or sediment traps, sediment socks, dewatering tanks, tube settlers, weir tanks, or filtration systems). Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control.*

(An uncontaminated discharge is a discharge that meets applicable water quality standards.)

You must also meet the following requirements for dewatering activities:

- Discharge requirements:
  - No discharging visible floating solids or foam;
  - Remove oil, grease and other pollutants from dewatering water via an oil-water separator or suitable filtration device (such as a cartridge filter);
  - Utilize vegetated upland areas of the site, to the extent feasible, to infiltrate dewatering water before discharge. In no case shall waters of the U.S. be considered part of the treatment area;
  - Implement velocity dissipation devices at all points where dewatering water is discharged;
  - Haul backwash water away for disposal or return it to the beginning of the treatment process; and
  - Clean or replace the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.
  - Treatment chemical restrictions: If you use polymers, flocculants or other chemicals to treat dewatering water, you must comply with the requirements in Parts 8.H.4.1.8.

8.H.4.2.10 *Pollution prevention requirements.*

- *Prohibited discharges* (this non-exhaustive list of prohibited non-stormwater discharges is included here as a reminder that only the only authorized non-stormwater discharges are those enumerated in Part 1.2.2):
  - Wastewater from washout of concrete;
  - Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;
  - Fuels, oils, or other pollutants used for operation and maintenance of vehicles or equipment;
  - Soaps, solvents, or detergents used in vehicle or equipment washing;
  - Toxic or hazardous substances from a spill or other release.
- *Design and location requirements:* Minimize the discharge of pollutants from pollutant sources by:
  - Minimizing exposure;
  - Using secondary containment, spill kits, or other equivalent measures;
  - Locating pollution sources away from surface waters, storm sewer inlets, and drainageways;
  - Cleaning up spills immediately (do not clean by hosing area down).
- *Pollution prevention requirements for wash waters:* Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in

a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;

- *Pollution prevention requirements for the storage, handling, and disposal of construction products, materials, and wastes:* Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to stormwater. Minimization of exposure is not required in cases where the exposure to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

8.H.4.2.11 ***Site Stabilization requirements for the construction of staging areas for structures and access roads as defined in Part 8.H.3.2(b***) (i.e., not applicable to earth-disturbing activities performed for purposes of mine site preparation as defined in Part 8.H.3.2(a)). You must comply with the following stabilization requirements, except where the intended function of the site accounts for such disturbed earth (e.g., the area of construction will become actively mined, or the controls implemented at the active mining area effectively control the disturbance):

- By no later than the end of the next work day after construction work in an area has stopped permanently or temporarily ("temporarily" means the land will be idle for a period of 14 days or more but earth-disturbing activities will resume in the future), immediately initiate stabilization measures;
- If using vegetative measures, by no later than 14 days after initiating stabilization:
  - Seed or plant the area, and provide temporary cover to protect the planted area;
  - Once established, vegetation must be uniform, perennial (if final stabilization), and cover at least 70% of stabilized area based on density of native vegetation.
- If using non-vegetative stabilization, by no later than 14 days after initiating stabilization:
  - Install or apply all non-vegetative measures;
  - Cover all areas of exposed soil.

Note: For the purposes of this permit, EPA will consider any of the following types of activities to constitute the initiation of stabilization: 1. Prepping the soil for vegetative or non-vegetative stabilization; 2. Applying mulch or other non-vegetative product to the exposed area; 3. Seeding or planting the exposed area; 4. Starting any of the activities in # 1 – 3 on a portion of the area to be stabilized, but not on the entire area; and 5. Finalizing arrangements to have stabilization product fully installed in compliance with the applicable deadline for completing stabilization.

Exceptions:

- Arid, semi-arid (if construction occurs during seasonally dry period), or drought-stricken areas:
  - Within 14 days of stopping construction work in an area, install any necessary non-vegetative stabilization measures;
  - Initiate vegetative stabilization as soon as conditions on the site allow;
  - Document the schedule that will be followed for initiating and completing vegetative stabilization;
  - Plant the area so that within 3 years the 70% cover requirement is met.
- Sites affected by severe storm events or other unforeseen circumstances:
  - Initiate vegetative stabilization as soon conditions on the site allow;
  - Document the schedule that will be followed for initiating and completing vegetative stabilization;
  - Plant the area so that so that within 3 years the 70% cover requirement is met.

8.H.4.3 *Water Quality-Based Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*

The following water quality-based limits apply to earth-disturbing activities conducted prior to active mining activities defined in Parts 8.H.3.2(a) and 8.H.3.2(b), in addition to the water quality-based limits in Part 2.2 of the MSGP.

Stricter requirements apply if your site will discharge to an impaired water or a water that is identified by your state, tribe, or EPA as a Tier 2 or Tier 2.5 for antidegradation purposes:

- More rapid stabilization of exposed areas: Complete initial stabilization activities within 7 days of stopping earth-disturbing work.
- More frequent site inspections: Once every 7 days and within 24 hours of a storm event of 0.25 inches or greater.

8.H.4.4 *Inspection Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*

The following requirements supersede the inspections requirements in Part 3 and 8.H.7 of the MSGP for earth-disturbing activities conducted prior to active mining activities defined in Parts 8.H.3.2(a) and 8.H.3.2(b).

8.H.4.4.1 Inspection Frequency

- At least once every 7 calendar days, or
- Once every 14 calendar days and within 24 hours of a storm event of 0.25 inches or greater.

Note:

- Inspections only required during working hours;
- Inspections not required during unsafe conditions; and
- If you choose to inspect once every 14 days, you must have a

method for measuring rainfall amount on site (either rain gauge or representative weather station)

Note: To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that.

Note: You are required to specify in your SWPPP which schedule you will be following.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if you have elected to inspect bi-weekly in and there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

8.H.4.4.2 Reductions in Inspection Frequency

- Stabilized areas: You may reduce the frequency of inspections to once per month in any area of your site where stabilization has occurred pursuant to Part 8.H.4.1.9 or 8.H.4.2.11.
- Arid, semi-arid, and drought stricken areas: If earth-disturbing activities are occurring during the seasonally dry period or during a period in which drought is predicted to occur, you may reduce inspections to once per month and within 24 hours of a 0.25 inch storm event.
- Frozen conditions: You may temporarily suspend or reduce inspections to once per month until thawing conditions occur if frozen conditions are continuous and disturbed areas have been stabilized. For extreme conditions in remote areas, e.g., where transit to the site is perilous/restricted or temperatures are routinely below freezing, you may suspend inspections until the conditions are conducive to safe access, and more frequent inspections can resume.

8.H.4.4.3 **Areas to be Inspected.** You must at a minimum inspect the following areas:

- Disturbed areas;
- Stormwater controls and pollution prevention measures;
- Locations where stabilization measures have been implemented;
- Material, waste, borrow, or equipment storage and maintenance areas;
- Areas where stormwater flows;
- Points of discharge.

8.H.4.4.4 ***What to Check for During Inspections***. At a minimum you must check:

- Whether all stormwater controls are installed, operational, and working as intended;
- Whether any new or modified stormwater controls are needed;
- For conditions that could lead to a spill or leak;
- For visual signs of erosion/sedimentation at points of discharge.

If a discharge is occurring:

- The quality and characteristics of the discharge (see Part 3.2.2.4);
- Whether controls are operating effectively.

8.H.4.4.5 **Inspection Report.** Within 24 hours of an inspection, complete a report that includes:

- Inspection date;
- Name and title of inspector(s);
- Summary of inspection findings;
- Rainfall amount that triggered the inspection (if applicable);
- If it was unsafe to inspect a portion of the site, include documentation of the reason and the location(s);
- Each inspection report must be signed;
- Keep a current copy of all reports at the site or at an easily accessible location.
- *Cessation of Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.* The requirements in 8.H.4 no longer apply for any earth- disturbing activities conducted prior to active mining activities as defined in 8.H.3.2(a) or 8.H.3.2(b) where:
- Earth-disturbing activities have ceased; and
- Stabilization has been met consistent with Part 8.H.4.1.9 or 8.H.4.2.11 (not required for areas where active mining activities will occur).

8.H.5 Technology-Based Effluent Limits for Active Mining Activities

Note: These requirements do not apply for any discharges from earth-disturbing activities conducted prior to active mining as defined in 8.H.3.2(a) or 8.H.3.2(b).

8.H.5.1 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2) As part of your good housekeeping program, in order to minimize discharges of pollutants in stormwater, implement control measures such as the following, where determined to be feasible (list not inclusive): using sweepers and covered storage; watering haul roads to minimize dust generation; and conserving vegetation to minimize erosion. For mines subject to dust control requirements under state or county air quality permits, provided the requirements are equivalent, compliance with such air permit dust requirements shall constitute compliance with the dust control effluent limit in Part 2.1.2.10.

8.H.5.2 ***Preventive Maintenance.*** (See also Part 2.1.2.3) Perform inspections or other equivalent measures of storage tanks and pressure lines of fuels, lubricants, hydraulic fluid, and slurry to prevent leaks due to deterioration or faulty connections.

8.H.6 Additional SWPPP Requirements for Mining Operations

Note: The requirements in Part 8.H.6 are not applicable to inactive coal mining facilities.

8.H.6.1 ***Other Applicable Regulations.*** Most active coal mining-related areas (SIC Codes 1221- 1241) are subject to sediment and erosion control regulations of the U.S. Office of Surface Mining (OSM) that enforces the Surface Mining Control and Reclamation Act (SMCRA). OSM has granted authority to most coal-producing states to

implement SMCRA through State SMCRA regulations. All SMCRA requirements regarding control of stormwater-related pollutant discharges must be addressed and then documented with the SWPPP (directly or by reference).

8.H.6.2 ***Site Map.*** (See also Part 6.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or stormwater: haul and access roads; railroad spurs, sliding, and internal hauling lines; conveyor belts, chutes, and aerial tramways; equipment storage and maintenance yards; coal handling buildings and structures; inactive mines and related areas; acidic spoil, refuse, or unreclaimed disturbed areas; and liquid storage tanks containing pollutants such as caustics, hydraulic fluids, and lubricants.

8.H.6.3 ***Potential Pollutant Sources.*** (See also Part 6.2.3) Document in your SWPPP the following sources and activities that have potential pollutants associated with them: truck traffic on haul roads and resulting generation of dust or sediment that could be discharged via stormwater; fuel or other liquid storage; pressure lines containing slurry, hydraulic fluid, or other potential harmful liquids; and loading or temporary storage of acidic refuse or spoil.

8.H.6.4 If you are in compliance with dust control requirements under state or county air quality permits, you must include (or summarize, as necessary) what the state or county air quality permit dust control requirements are and how you've achieved compliance with them.

8.H.7 Additional Inspection Requirements (See also Part 3.1)

8.H.7.1 ***Inspections of Active Mining-Related Areas.*** (See also Part 3) Except for earth-disturbing activities conducted prior to active mining activities as defined in Parts 8.H.3.2(a) and 8.H.3.2(b), which are subject to Part 8.H.4.4, perform routine inspections of active mining areas covered by this permit, corresponding with the inspections as performed by SMCRA inspectors, of all mining-related areas required by SMCRA. Also maintain the records of the SMCRA authority representative. See Part 8.H.9.1 for inspection requirements for inactive and unstaffed sties.

8.H.7.2 ***Sediment and Erosion Control.*** (See also Part 2.1.2.5) As indicated in Part 8.H.6.1, SMCRA requirements regarding sediment and erosion control measures must be complied with for those areas subject to SMCRA authority, including inspection requirements.

8.H.7.3 ***Routine Site Inspections. (See also Part 3.1***) Your inspection program must include inspections for pollutants entering the drainage system from activities located on or near coal mining-related areas. Among the areas to be inspected are haul and access roads; railroad spurs, sliding, and internal hauling lines; conveyor belts, chutes, and aerial tramways; equipment storage and maintenance yards; coal handling buildings and structures; and inactive mines and related areas.

8.H.8 Indicator Monitoring (See also Part 4.2.1)

Table 8.H-1 identifies indicator monitoring that applies to the specific subsectors of Sector H. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.H-1		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Indicator Monitoring Parameter**	**Indicator Monitoring Threshold**
Applies to all Sector H (Subsector H1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector H1. Coal Mines and Coal Mining-Related Facilities (SIC Code 1221-1241)	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.H.9 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.H-2 identifies benchmarks that apply to the specific subsectors of Sector H. These benchmarks apply to both your primary industrial activity and any co-located industrial activities. Note: There are no Part 8.H. 8 and 8.H.9 monitoring and reporting or impaired waters monitoring requirements for inactive and unstaffed sites.

Table 8.H-2.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector H1. Coal Mines and Related Areas (SIC 1221-1241)	Total Recoverable Aluminum	1,100 µg/L
	Total Suspended Solids (TSS)	100 mg/L

8.H.9.1 ***Inactive and Unstaffed Sites*** **– Conditional Exemption from No Exposure Requirement for Routine Inspections, Quarterly Visual Assessments, and Indicator, Benchmark and Impaired Waters Monitoring.** As a Sector H facility, if you are seeking to exercise a waiver from either the quarterly visual assessment or the indicator, benchmark, and/or impaired waters monitoring requirements for inactive and unstaffed sites (including temporarily inactive sites), you are conditionally exempt from the requirement to certify that "there are no industrial materials or activities exposed to stormwater" in Parts 3.2.4.4, 4.2.1.3, and 4.2.5.2. Additionally, if you are seeking to reduce your required routine inspection frequency, as is allowed under Part 3.1.5, you are also conditionally exempt from the requirement to certify that "there are no industrial materials or activities exposed to stormwater." These conditional exemptions are based on the following requirements:

- If circumstances change and your facility becomes active and/or staffed, this exception no longer applies and you must immediately begin complying with the applicable benchmark monitoring requirements as if you were in your first year of permit coverage, and the quarterly visual assessment requirements; and

- EPA retains the authority to revoke this exemption and/or the monitoring waiver where it is determined that the discharge causes, has a reasonable potential to cause or contribute to an instream excursion above an applicable water quality standard, including designated uses.

Subject to the two conditions above, if your facility is inactive and unstaffed, you are waived from the requirement to conduct routine facility inspections, quarterly visual assessments, and benchmark and impaired waters monitoring. You must still conduct an annual site inspection in accordance with Part 3.1. You are encouraged to inspect your site more frequently where you have reason to believe that severe weather or natural disasters may have damaged control measures or increased discharges.

8.H.10 Termination of Permit Coverage

8.H.10.1 ***Termination of Permit Coverage for Sites Reclaimed After December 17, 1990.*** A site or a portion of a site that has been released from applicable state or federal reclamation requirements after December 17, 1990, is no longer required to maintain coverage under this permit. If the site or portion of a site reclaimed after December 17, 1990, was not subject to reclamation requirements, the site or portion of the site is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed as defined in Part 8.H.3.5.

8.H.10.2 ***Termination of Permit Coverage for Sites Reclaimed Before December 17, 1990.*** A site or portion of a site that was released from applicable state or federal reclamation requirements before December 17, 1990, or that was otherwise reclaimed before December 17, 1990, is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed. A site or portion of a site is considered to have been reclaimed if: (1) stormwater that comes into contact with raw materials, intermediate byproducts, finished products, and waste products does not have the potential to cause or contribute to violations of state water quality standards,

(2) soil disturbing activities related to mining at the sites or portion of the site have been completed, (3) the site or portion of the site has been stabilized to minimize soil erosion, and (4) as appropriate depending on location, size, and the potential to contribute pollutants to stormwater discharges, the site or portion of the site has been revegetated, will be amenable to natural revegetation, or will be left in a condition consistent with the post-mining land use.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart I – Sector I – Oil and Gas Extraction

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.I.1 Covered Stormwater Discharges.

The requirements in Subpart I apply to stormwater discharges associated with industrial activity from Oil and Gas Extraction facilities as identified by the SIC Codes specified under Sector I in Table D-1 of Appendix D of the permit.

8.I.1.1 Discharges of stormwater from field activities or operations associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities are exempt from NPDES permit coverage unless, in accordance with 40 CFR 122.26(c)(1)(iii), the facility:

- Has had a discharge of stormwater resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 117.21 or 40 CFR 302.6 at any time since November 16, 1987; or
- Has had a discharge of stormwater resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 110.6 at any time since November 16, 1987; or
- Contributes to a violation of a water quality standard.

Any stormwater discharges that require permit coverage as a result of meeting one of the conditions of 122.26(c)(1)(iii) may be covered under this permit unless otherwise required to obtain coverage under an alternative NPDES general permit or an individual NPDES permit as specified in Part 1.3.8.

8.I.2 Limitations on Coverage

8.I.2.1 ***Stormwater Discharges Subject to Effluent Limitation Guidelines.*** (See also Part 4.2.3) This permit does not authorize stormwater discharges from drilling operations that are subject to nationally established effluent limitation guidelines found at 40 CFR Part 435, respectively.

8.I.2.2 ***Non-Stormwater Discharges. Discharges of vehicle and equipment wash water, including tank cleaning operations, are not authorized by this permit.*** Alternatively, wash water discharges must be authorized under a separate NPDES permit, or be discharged to a sanitary sewer in accordance with applicable industrial pretreatment requirements. (EPA includes this prohibited non-stormwater discharge here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2).

8.I.3 Additional Technology-Based Effluent Limits

8.I.3.1 ***Vegetative Controls.*** Implement vegetative practices designed to preserve existing vegetation, where attainable, and revegetate open areas as soon as practicable after grade drilling. Implement appropriate vegetative practices, such as the following (list

not exclusive): temporary or permanent seeding, mulching, sod stabilization, vegetative buffer strips, and tree protection practices. Begin implementing appropriate vegetative practices on all disturbed areas within 14 days following the last activity in that area.

8.I.4 Additional SWPPP Requirements

8.I.4.1 ***Drainage Area Site Map.*** (See also Part 6.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or stormwater: Reportable Quantity (RQ) releases; locations used for the treatment, storage, or disposal of wastes; processing areas and storage areas; chemical mixing areas; construction and drilling areas; all areas subject to the effluent guidelines requirements for "No Discharge" in accordance with 40 CFR 435.32; and the structural controls to achieve compliance with the "No Discharge" requirements.

8.I.4.2 ***Potential Pollutant Sources.*** (See also Part 6.2.3) Also document in your SWPPP the following sources and activities that have potential pollutants associated with them: chemical, cement, mud, or gel mixing activities; drilling or mining activities; and equipment cleaning and rehabilitation activities. In addition, include information about the reportable quantity (RQ) release that triggered the permit application requirements: the nature of the release (e.g., spill of oil from a drum storage area), amount of oil or hazardous substance released, amount of substance recovered, date of the release, cause of the release (e.g., poor handling techniques and lack of containment in the area), areas affected by the release (i.e., land and water), procedures to clean up release, actions or procedures implemented to prevent or improve response to a release, and remaining potential contamination of stormwater from release (taking into account human health risks, the control of drinking water intakes, and the designated uses of the receiving water).

8.I.4.3 ***Erosion and Sediment Controls.*** (See also Part 2.1.2.5) Unless covered by EPA's Construction General Permit (CGP), the additional documentation requirements for sediment and erosion controls for well drillings and sand/shale mining areas include the following:

8.I.4.3.1 ***Site Description.*** Also include a description in your SWPPP of the nature of the exploration activity, estimates of the total area of site and area disturbed due to exploration activity, an estimate of runoff coefficient of the site, a site drainage map, including approximate slopes, and the names of all receiving waters.

8.I.4.3.2 ***Vegetative Controls****. Document vegetative practices used consistent with Part 8.I.3.1 in the SWPPP.*

8.I.5 Additional Inspection Requirements

All erosion and sediment controls must be inspected either: 1) every 7 days; or 2) once every 14 calendar days and within 24 hours of a storm event of 0.25 inches or greater.

8.I.6 Indicator Monitoring (See also Part 4.2.1)

Table 8.I-1 identifies indicator monitoring that applies to the specific subsectors of Sector I. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.I-1		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Indicator Monitoring Parameter**	**Indicator Monitoring Threshold**
Applies to all Sector I (Subsector I1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector I1. Crude Petroleum and Natural Gas (SIC Code 1311); Natural Gas Liquids (SIC Code 1321); Oil and Gas Field Services (SIC Code 1381-1389)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values
	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart J – Sector J – Non-Metallic Mineral Mining and Dressing

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

Note: Where compliance with a requirement in a separate exploration permit, mining permit, reclamation plan, Surface Mining Control and Reclamation Act (SMCRA) requirements, etc. will result in you fully meeting any requirement in this Subpart, you are considered to have complied with the relevant requirement in this Subpart. You must include documentation in your SWPPP describing your rationale for concluding that any particular action on your part is sufficient to comply with the corresponding requirement in this Subpart.

8.J.1 Covered Stormwater Discharges

The requirements in Subpart J apply to stormwater discharges associated with industrial activity from Active and Inactive Non-Metallic Mineral Mining and Dressing facilities as identified by the SIC Codes specified under Sector J in Table D-1 of Appendix D of the permit.

8.J.1.1 ***Covered Discharges from Inactive Facilities.*** All stormwater discharges.

8.J.1.2 ***Covered Discharges from Active and Temporarily Inactive Facilities.*** All stormwater discharges, except for most stormwater discharges subject to the existing effluent limitation guideline at 40 CFR Part 436. Mine dewatering discharges composed entirely of stormwater or uncontaminated ground water seepage from: construction sand and gravel, industrial sand, and crushed stone mining facilities.

8.J.1.3 ***Covered Discharges from Earth-Disturbing Activities Conducted Prior to Active Mining Activities. All stormwater discharges.***

8.J.1.4 ***Covered Discharges from Sites Undergoing Reclamation. All stormwater discharges.***

8.J.2 Limitations on Coverage.

Most stormwater discharges subject to an existing effluent limitation guideline at 40 CFR Part 436 are not authorized by this permit. The exceptions to this limitation, which are covered by this permit, are mine dewatering discharges composed entirely of stormwater or uncontaminated ground water seepage from construction sand and gravel, industrial sand, and crushed stone mining facilities.

8.J.3 Definitions

The following definitions are not intended to supersede the definitions of active and inactive mining facilities established by 40 CFR 122.26(b)(14)(iii).

8.J.3.1 ***Mining operations*** – For this permit, mining operations are grouped into two distinct categories, with distinct effluent limits and requirements applicable to each: a) earth-disturbing activities conducted prior to active mining activities); and b) active mining activities, which includes reclamation. "Mining operations" can occur at both inactive mining facilities and temporarily inactive mining facilities.

8.J.3.2 ***Earth-disturbing activities conducted prior to active mining activities*** – Consists of two classes of earth-disturbing (i.e., clearing, grading and excavation) activities:

a. activities performed for purposes of mine site preparation, including: cutting new rights of way (except when related to access road construction); providing access to a mine site for vehicles and equipment (except when related to access road construction); other earth disturbances associated with site preparation activities on any areas where active mining activities have not yet commenced (e.g., for heap leach pads, waste rock facilities, tailings impoundments, wastewater treatment plants); and

b. construction of staging areas to prepare for erecting structures such as to house project personnel and equipment, mill buildings, etc., and construction of access roads. Earth-disturbing activities associated with the construction of staging areas and the construction of access roads conducted prior to active mining are considered to be "construction" and have additional effluent limits in Part 8.J.4.2.

8.J.3.3 ***Active mining activities*** – Activities related to the extraction, removal or recovery, and beneficiation of non-metallic minerals from the earth; removal of overburden and waste rock to expose mineable minerals; and site reclamation and closure activities. All such activities occur within the "active mining area." Reclamation involves activities undertaken, in compliance with applicable mined land reclamation requirements, to return the land to an appropriate post-mining contour and land use in order to meet applicable federal and state reclamation requirements. In addition, once earth- disturbing activities conducted prior to active mining activities have ceased and all related requirements in Part 8.J.4 have been met, and a well-delineated "active mining area" has been established, all activities (including any clearing, grading, and excavation) that occur within the active mining area are "active mining activities

8.J.3.4 ***Active mining area*** – A place where work or other activity related to the extraction, removal or recovery of non-metallic minerals is being conducted, except, with respect to surface mines, any area of land on or in which grading has been completed to return the earth to desired contour and reclamation work has begun.

Note: Earth-disturbing activities described in the definition in Part 8.J.3.2 that occur on areas outside the active mining area (e.g., for expansion of the mine into undeveloped territory) are considered "earth-disturbing conducted prior to active mining activities", and must comply with the requirements in Part 8.J.4.

8.J.3.5 ***Inactive mineral mining facility*** – A site or portion of a site where mineral mining and/or milling occurred in the past but there are no active mining activities occurring as defined above, and where the inactive portion is not covered by an active mining permit issued by the applicable state or federal agency. An inactive mineral mining facility has an identifiable owner / operator. Sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, and sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim are not considered either active or inactive mining facilities and do not require an NPDES industrial stormwater permit.

8.J.3.6 ***Temporarily inactive mineral mining facility*** – A site or portion of a site where non-metallic mineral mining and/or milling occurred in the past but currently are not

being actively undertaken, and the facility is covered by an active mining permit issued by the applicable state or federal agency.

8.J.4 Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities

Stormwater discharges from earth-disturbing activities conducted prior to active mining activities (defined in Part 8.J.3.2) are covered under this permit. For such earth-disturbing activities, you must comply with all applicable requirements in Parts 1-9 of the MSGP except for the technology-based effluent limits in Part 8.J.5 and Part 2.1.2, the inspection requirements in Part 8.J.7 and Part 3, and the monitoring requirements in Part 8.J.8, Part 8.J.9, and Part 4.

Authorized discharges from areas where earth-disturbing activities have ceased and stabilization as specified in Part 8.J.4.1.9 or 8.J.4.2.11, where appropriate, has been completed (stabilization is not required for areas where active mining activities will occur), are no longer subject to the Part 8.J.4 requirements. At such time, authorized discharges become subject to all other applicable requirements in the MSGP, including the effluent limits in Parts 2.1.2 and 8.J.5, the inspection requirements in Parts 3 and 8.J.7, and the monitoring requirements in Parts 4, 8.J.8, and 8.J.9.

8.J.4.1 ***Technology-Based Effluent Limits Applicable to All Earth-Disturbing Activities Conducted Prior to Active mining Activities.*** The following technology-based effluent limits apply to authorized discharges from all earth-disturbing activities conducted prior to active mining activities defined in Part 8.J.3.2(a) and 8.J.3.2(b). These limits supersede the technology-based limits listed in Part 2.1.2 and Part 8.J.5 of the MSGP.

8.J.4.1.1 Erosion and sediment control installation requirements.

- By the time construction activities commence, install and make operational downgradient sediment controls, unless this timeframe is infeasible. If infeasible you must install and make such controls operational as soon as practicable or as soon as site conditions permit.
- All other stormwater controls described in the SWPPP must be installed and made operational as soon as conditions on each portion of the site allows.

8.J.4.1.2 Erosion and sediment control maintenance requirements. You must:

- Ensure that all erosion and sediment controls remain in effective operating condition.
- Wherever you determine that a stormwater control needs maintenance to continue operating effectively, initiate efforts to fix the problem immediately after its discovery, and complete such work by the end of the next work day.
- When a stormwater control must be replaced or significantly repaired, complete the work within 7 days, unless infeasible. If 7 days is infeasible, you must complete the installation or repair as soon as practicable.

8.J.4.1.3 Perimeter controls. You must:

- Install sediment controls along those perimeter areas of your disturbed area that will receive stormwater, except where site conditions prevent the use of such controls (in which case, maximize their installation to the extent practicable).

- Remove sediment before it accumulates to one-half of the above-ground height of any perimeter control.

8.J.4.1.4 ***Sediment track-out.*** For construction vehicles and equipment exiting the site directly onto paved roads, you must:

- Use appropriate stabilization techniques to minimize sediment track-out from vehicles and equipment prior to exit;
- Use additional controls to remove sediment from vehicle and equipment tires prior to exit, where necessary;
- Remove sediment that is tracked out onto paved roads by end of the work day.

Note: EPA recognizes that some fine grains may remain visible on the surfaces of off-site streets, other paved areas, and sidewalks even after you have implemented sediment removal practices. Such "staining" is not a violation of Part 8.J.4.1.4.

8.J.4.1.5 ***Soil or sediment stockpiles.*** You must:

- Minimize erosion of stockpiles from stormwater and wind via temporary cover, if feasible.
- Prevent up-slope stormwater flows from causing erosion of stockpiles (e.g., by diverting flows around the stockpile).
- Minimize sediment from stormwater that runs off of stockpiles, using sediment controls (e.g., a sediment barrier or downslope sediment control).

8.J.4.1.6 ***Sediment basins****. If you intend to install a sediment basin to treat stormwater from your earth-disturbing activities, you must:*

- Provide storage for either (1) the 2-year, 24-hour storm, or (2) 3,600 cubic feet per acre drained.
- Prevent erosion of (1) basin embankments using stabilization controls (e.g., erosion control blankets), and (2) the inlet and outlet points of the basin using erosion controls and velocity dissipation devices.

8.J.4.1.7 ***Minimize dust.*** You must minimize the generation of dust through the appropriate application of water or other dust suppression techniques that minimize pollutants being discharged into surface waters.

8.J.4.1.8 ***Restrictions on use of treatment chemicals.*** If you intend to use sediment treatment chemicals at your site, you are subject to the following minimum requirements:

- Use conventional erosion and sediment controls prior to and after application of chemicals;
- Select chemicals suited to soil type, and expected turbidity, pH, flow rate;
- Minimize the discharge risk from stored chemicals;
- Comply with state/local requirements;
- Use chemicals in accordance with good engineering practices and specifications of chemical supplier;
- Ensure proper training;
- Provide proper SWPPP documentation.

If you plan to use cationic treatment chemicals (as defined in Appendix A), you are ineligible for coverage under this permit, unless you notify your applicable EPA Regional Office in advance and the EPA Regional Office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

8.J.4.1.9 ***Site stabilization requirements for earth-disturbing activities performed for purposes of mine site preparation as defined in 8.J.3.2(a)*** (i.e., not applicable to construction of staging areas for structures and access roads as defined in 8.J.3.2(b)). You must comply with the following stabilization requirements except where the intended function of the site accounts for such disturbed earth (e.g., the earth disturbances will become actively mined, or the controls implemented at the active mining area effectively control the disturbance):

- *Temporary stabilization of disturbed areas.* Stabilization measures must be initiated immediately in portions of the site where earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.J.3.2(a)) have temporarily ceased, but in no case more than 14 days after such activities have temporarily ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 14 days after earth-disturbing activities performed for purposes of mine site preparation has temporarily ceased, temporary vegetative stabilization measures must be initiated as soon as practicable. Until temporary vegetative stabilization is achieved, interim measures such as erosion control blankets with an appropriate seed base and tackifiers must be employed. In areas of the site where earth-disturbing activities performed for purposes of mine site preparation have permanently ceased prior to active mining, temporary stabilization measures must be implemented to minimize mobilization of sediment or other pollutants until active mining activities commence.
- *Final stabilization of disturbed areas.* Stabilization measures must be initiated immediately where earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.J.3.2(a)) have permanently ceased, but in no case more than 14 days after the earth- disturbing activities have permanently ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 14 days after earth-disturbing activities have permanently ceased, final vegetative stabilization measures must be initiated as soon as possible. Until final stabilization is achieved, temporary stabilization measures, such as erosion control blankets with an appropriate seed base and tackifiers, must be used.

8.J.4.2 ***Additional Technology-Based Effluent Limits Applicable Only to the Construction of Staging Areas for Structures and Access Roads.*** The following technology-based effluent limits apply to authorized discharges from earth-disturbing activities associated with the construction of staging areas and the construction of access roads, as defined in Part 8.J.3.2(b). These limits supersede the technology-based limits listed in Part 2.1.2 and Part 8.J.5 of the MSGP. These limits do not apply to earth-

disturbing activities performed for purposes of mine site preparation (as defined in 8.J.3.2(a)).

8.J.4.2.1 ***Area of disturbance***. You must minimize the amount of soil exposed during construction activities.

8.J.4.2.2 ***Erosion and sediment control design requirements.*** You must:

- Design, install and maintain effective erosion and sediment controls to minimize the discharge of pollutants from construction activities. Account for the following factors in designing your erosion and sediment controls:
  - The expected amount, frequency, intensity and duration of precipitation;
  - The nature of stormwater discharges and run-on at the site, including factors such as impervious surfaces, slopes and site drainage features;
  - The range of soil particle sizes expected to be present on the site.
- Direct discharges from your stormwater controls to vegetated areas of your site to increase sediment removal and maximize stormwater infiltration, including any natural buffers, unless infeasible. Use velocity dissipation devices if necessary to prevent erosion when directing stormwater to vegetated areas.
- If any stormwater flow becomes or will be channelized at your site, you must design erosion and sediment controls to control both peak flowrates and total stormwater volume to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.
- If you install stormwater conveyance channels, they must be designed to avoid unstabilized areas on the site and to reduce erosion, unless infeasible. In addition, you must minimize erosion of channels and their embankments, outlets, adjacent streambanks, slopes, and downstream waters during discharge conditions through the use of erosion controls and velocity dissipation devices within and along the length of any constructed stormwater conveyance channel, and at any outlet to provide a non-erosive flow velocity.

8.J.4.2.3 ***Natural Buffers***. For any stormwater discharges from construction activities within 50 feet of a water of the U.S., you must comply with one of the following compliance alternatives:

1. Provide a 50-foot undisturbed natural buffer between construction activities and the water of the U.S.; or

2. Provide an undisturbed natural buffer that is less than 50 feet supplemented by additional erosion and sediment controls, which in combination, achieve a sediment load reduction that is equivalent to a 50-foot undisturbed natural buffer; or

3. If it is infeasible to provide an undisturbed natural buffer of any size, implement erosion and sediment controls that achieve a sediment load reduction that is equivalent to a 50-foot undisturbed natural buffer.

There are exceptions when buffer requirements do not apply:

- There is no stormwater discharge from construction disturbances to a water of the U.S;
- The natural buffer has already been eliminated by preexisting development disturbances;
- The disturbance is for the construction of a water-dependent structure or construction approved under a CWA section 404 permit;
- For linear construction projects, you are not required to comply with the requirements if there are site constraints provided that, to the extent feasible, you limit disturbances within 50 feet of a water of the U.S. and/or you provide supplemental erosion and sediment controls to treat stormwater discharges from any disturbances within 50 feet of a water of the U.S.

See EPA's industrial stormwater website under "Fact Sheets and Guidance" for information on complying with these alternatives: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities.

8.J.4.2.4 ***Soil or sediment stockpiles***. In addition to the requirements in Part 8.J.4.1.5, you must locate any piles outside of any natural buffers established under Part 8.J.4.2.3.

8.J.4.2.5 ***Sediment basins***. In addition to the requirements in Part 8.J.4.1.6, you must locate sediment basins outside of any surface waters and any natural buffers established under Part 8.J.4.2.3, and you must utilize outlet structures that withdraw water from the surface, unless infeasible.

8.J.4.2.6 ***Native topsoil preservation.*** You must preserve native topsoil removed during clearing, grading, or excavation, unless infeasible. Store topsoil in a manner that will maximize its use in reclamation or final vegetative stabilization (e.g., by keeping the topsoil stabilized with seed or similar measures). This requirement does not apply if the intended function of the disturbed area dictates that topsoil be disturbed or removed.

8.J.4.2.7 ***Steep slopes.*** You must minimize the disturbance of steep slopes. The permit does not prevent or prohibit disturbance on steep slopes.

Depending on site conditions and needs, disturbance on steep slopes may be necessary (e.g., a road cut in mountainous terrain; for grading steep slopes prior to erecting the mine office). Where steep slope disturbances are necessary, you can minimize the disturbances to steep slopes through the implementation of a number of standard erosion and sediment control practices, such as by phasing disturbances in these areas and using stabilization practices specifically for steep grades.

8.J.4.2.8 **Soil compaction.** Where final vegetative stabilization will occur or where infiltration practices will be installed, you must either restrict vehicle/ equipment use in these areas to avoid soil compaction or use soil conditioning techniques to support vegetative growth. Minimizing soil compaction is not required where compacted soil is integral to the functionality of the site.

8.J.4.2.9 **Dewatering Practices.** You are prohibited from discharging ground water or accumulated stormwater that is removed from excavations, trenches,

foundations, vaults or other similar points of accumulation, unless such waters are first effectively managed by appropriate controls (e.g., sediment basins or sediment traps, sediment socks, dewatering tanks, tube settlers, weir tanks, or filtration systems). Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control. (An uncontaminated discharge is a discharge that meets applicable water quality standards.)

You must also meet the following requirements for dewatering activities:

- Discharge requirements:
  - No discharging visible floating solids or foam;
  - Remove oil, grease and other pollutants from dewatering water via an oil-water separator or suitable filtration device (such as a cartridge filter);
  - Utilize vegetated upland areas of the site, to the extent feasible, to infiltrate dewatering water before discharge. In no case shall waters of the U.S. be considered part of the treatment area;
  - Implement velocity dissipation devices at all points where dewatering water is discharged;
  - Haul backwash water away for disposal or return it to the beginning of the treatment process; and
  - Clean or replace the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.
- Treatment chemical restrictions: If you use polymers, flocculants or other chemicals to treat dewatering water, you must comply with the requirements in Parts 8.J.4.1.8.

8.J.4.2.10 *Pollution prevention requirements.*

- *Prohibited discharges* (this non-exhaustive list of prohibited non-stormwater discharges is included here as a reminder that only the only authorized non-stormwater discharges are those enumerated in Part 1.2.2):
  - Wastewater from washout of concrete;
  - Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;
  - Fuels, oils, or other pollutants used for operation and maintenance of vehicles or equipment;
  - Soaps, solvents, or detergents used in vehicle or equipment washing;
  - Toxic or hazardous substances from a spill or other release.
- *Design and location requirements:* Minimize the discharge of pollutants from pollutant sources by:
  - Minimizing exposure;
  - Using secondary containment, spill kits, or other equivalent measures;
  - Locating pollution sources away from surface waters, storm sewer inlets, and drainageways;
  - Cleaning up spills immediately (do not clean by hosing area

down).

- *Pollution prevention requirements for wash waters:* Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
- *Pollution prevention requirements for the storage, handling, and disposal of construction products, materials, and wastes:* Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to stormwater. Minimization of exposure is not required in cases where the exposure to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

8.J.4.2.11 ***Site Stabilization requirements for the construction of staging areas for structures and access roads as defined in 8.J.3.2(b)*** (i.e., not applicable to earth-disturbing activities performed for purposes of mine site preparation as defined in 8.J.3.2(a)). You must comply with the following stabilization requirements, except where the intended function of the site accounts for such disturbed earth (e.g., the area of construction will become actively mined, or the controls implemented at the active mining area effectively control the disturbance):

- By no later than the end of the next work day after construction work in an area has stopped permanently or temporarily ("temporarily" means the land will be idle for a period of 14 days or more but earth-disturbing activities will resume in the future), immediately initiate stabilization measures;
- If using vegetative measures, by no later than 14 days after initiating stabilization:
  - Seed or plant the area, and provide temporary cover to protect the planted area;
  - Once established, vegetation must be uniform, perennial (if final stabilization), and cover at least 70% of stabilized area based on density of native vegetation.
- If using non-vegetative stabilization, by no later than 14 days after initiating stabilization:
  - Install or apply all non-vegetative measures;
  - Cover all areas of exposed soil.

Note: For the purposes of this permit, EPA will consider any of the following types of activities to constitute the initiation of stabilization: 1. Prepping the soil for vegetative or non-vegetative stabilization; 2. Applying mulch or other non- vegetative product to the exposed area; 3. Seeding or planting the exposed area; 4. Starting any of the activities in # 1 – 3 on a portion of the area to be stabilized, but not on the entire area; and 5. Finalizing arrangements to have stabilization product fully installed in compliance with the applicable deadline for completing stabilization.

Exceptions:

- Arid, semi-arid (if construction occurs during seasonally dry period), or drought-stricken areas:
  - Within 14 days of stopping construction work in an area, install any necessary non-vegetative stabilization measures;
  - Initiate vegetative stabilization as soon as conditions on the site allow;
  - Document the schedule that will be followed for initiating and completing vegetative stabilization;
  - Plant the area so that within 3 years the 70% cover requirement is met.
- Sites affected by severe storm events or other unforeseen circumstances:
  - Initiate vegetative stabilization as soon conditions on the site allow;
  - Document the schedule that will be followed for initiating and completing vegetative stabilization;
  - Plant the area so that so that within 3 years the 70% cover requirement is met.

8.J.4.3 *Water Quality-Based Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*

The following water quality-based limits apply to earth-disturbing activities conducted prior to active mining activities defined in Parts 8.J.3.2(a) and 8.J.3.2(b), in addition to the water quality-based limits in Part 2.2 of the MSGP.

Stricter requirements apply if your site will discharge to an impaired water or a water that is identified by your state, tribe, or EPA as a Tier 2 or Tier 2.5 for antidegradation purposes:

- More rapid stabilization of exposed areas: Complete initial stabilization activities within 7 days of stopping construction work.
- More frequent site inspections: Once every 7 days and within 24 hours of a storm event of 0.25 inches or greater.

8.J.4.4 *Inspection Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*

The following requirements supersede the inspections requirements in Part 3 and 8.J.7 of the MSGP for earth-disturbing activities conducted prior to active mining activities defined in Parts 8.J.3.2(a) and 8.J.3.2(b).

8.J.4.4.1 Inspection Frequency

- At least once every 7 calendar days, or
- Once every 14 calendar days and within 24 hours of a storm event of 0.25 inches or greater.

Note: Inspections only required during working hours;

- Inspections not required during unsafe conditions; and

- If you choose to inspect once every 14 days, you must have a method for measuring rainfall amount on site (either rain gauge or representative weather station)

Note: To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that day.

Note: You are required to specify in your SWPPP which schedule you will be following.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if you have elected to inspect bi-weekly and there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

8.J.4.4.2 *Reductions in Inspection Frequency*

- Stabilized areas: You may reduce the frequency of inspections to once per month in any area of your site where stabilization has occurred pursuant to Part 8.J.4.1.9 or Part 8.J.4.2.11.
- Arid, semi-arid, and drought stricken areas: If earth-disturbing activities are occurring during the seasonally dry period or during a period in which drought is predicted to occur, you may reduce inspections to once per month and within 24 hours of a 0.25 inch storm event.
- Frozen conditions: You may temporarily suspend or reduce inspections to once per month until thawing conditions occur if frozen conditions are continuous and disturbed areas have been stabilized. For extreme conditions in remote areas, e.g., where transit to the site is perilous/restricted or temperatures are routinely below freezing, you may suspend inspections until the conditions are conducive to safe access, and more frequent inspections can resume.

8.J.4.4.3 **Areas to be Inspected.** ***You must at a minimum inspect the all of the following areas:***

- Disturbed areas;
- Stormwater controls and pollution prevention measures;
- Locations where stabilization measures have been implemented;
- Material, waste, borrow, or equipment storage and maintenance areas;
- Areas where stormwater flows;
- Points of discharge.

8.J.4.4.4 ***What to Check for During Inspections.*** At a minimum you must check:

- Whether all stormwater controls are installed, operational and working as intended;

- Whether any new or modified stormwater controls are needed;
- For conditions that could lead to a spill or leak;
- For visual signs of erosion/sedimentation at points of discharge. If a discharge is occurring:
- The quality and characteristics of the discharge (see Part 3.2.2.4);
- Whether controls are operating effectively.

8.J.4.4.5 ***Inspection Report.*** Within 24 hours of an inspection, complete a report that includes:

- Inspection date;
- Name and title of inspector(s);
- Summary of inspection findings;
- Rainfall amount that triggered the inspection (if applicable);
- If it was unsafe to inspect a portion of the site, include documentation of the reason and the location(s);
- Each inspection report must be signed;
- Keep a current copy of all reports at the site or at an easily accessible location.

8.J.4.5 ***Cessation of Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*** The requirements in 8.J.4 no longer apply for any earth-disturbing activities conducted prior to active mining activities as defined in 8.J.3.2(a) or 8.J.3.2(b) where:

1. Earth-disturbing activities have ceased; and
2. Stabilization has been met consistent with Part 8.J.4.1.9 or Part 8.J.4.2.11 (not required for areas where active mining activities will occur).

8.J.5 **Technology-Based Effluent Limits for Active Mining Activities**

Note: These requirements do not apply for any discharges from earth-disturbing activities conducted prior to active-mining as defined in 8.J.3.2(a) or 8.J.3.2(b).

8.J.5.1 ***Employee Training.*** Conduct employee training at least annually at active and temporarily inactive sites. (See also Part 2.1.2.8).

8.J.5.2 ***Stormwater Controls.*** Apart from the control measures you implement to meet your Part 2 effluent limits, where necessary to minimize pollutant discharges in stormwater, implement the following control measures at your site. The potential pollutants identified in Part 8.J.6.3 shall determine the priority and appropriateness of the control measures selected.

Stormwater Diversions: Divert stormwater away from potential pollutant sources through implementation of control measures such as the following, where determined to be feasible (list not exclusive): interceptor or diversion controls (e.g., dikes, swales, curbs, berms); pipe slope drains; subsurface drains; conveyance systems (e.g., channels or gutters, open-top box culverts, and waterbars; rolling dips and road sloping; roadway surface water deflector and culverts); or their equivalents. For mines subject to dust control requirements under state or county air quality permits, provided the requirements are equivalent, compliance with such air permit dust requirements shall constitute compliance with the dust control effluent limit in Part 2.1.2.10.

Capping: When capping is necessary to minimize pollutant discharges in stormwater, identify the source being capped and the material used to construct the cap.

Treatment: If treatment of stormwater (e.g., chemical or physical systems, oil and water separators, artificial wetlands) is necessary to protect water quality, describe the type and location of treatment used. Passive and/or active treatment of stormwater is encouraged. Treated stormwater may be discharged as a stormwater source regulated under this permit provided the discharge is not combined with discharges subject to effluent limitation guidelines for the Mineral Mining and Processing Point Source Category (40 CFR Part 436).

8.J.5.3 ***Discharge Testing.*** (See also Part 6.2.3.4) Test or evaluate all discharge points covered under this permit for the presence of specific mining-related but unauthorized non-stormwater discharges such as discharges subject to effluent limitations guidelines (e.g., 40 CFR Part 436). Alternatively (if applicable), you may keep a certification with your SWPPP, per Part 8.J.6.6.

8.J.6 Additional SWPPP Requirements for Mining Operations

Note: The requirements in Part 8.J.6 are not applicable to inactive mineral mining facilities.

8.J.6.1 ***Nature of Industrial Activities.*** (See also Part 6.2.2) Document in your SWPPP the mining and associated activities that can potentially affect the stormwater discharges covered by this permit, including a general description of the location of the site relative to major transportation routes and communities.

8.J.6.2 ***Site Map***. (See also Part 6.2.2) Document in your SWPPP the locations of the following (as appropriate): mining or milling site boundaries; access and haul roads; outline of the drainage areas of each stormwater discharge points within the facility with indications of the types of discharges from the drainage areas; location(s) of all permitted discharges covered under an individual NPDES permit; outdoor equipment storage, fueling, and maintenance areas; materials handling areas; outdoor manufacturing, outdoor storage, and material disposal areas; outdoor chemicals and explosives storage areas; overburden, materials, soils, or waste storage areas; location of mine drainage dewatering or other process water; heap leach pads; off-site points of discharge for mine dewatering and process water; surface waters; boundary of tributary areas that are subject to effluent limitations guidelines; and location(s) of reclaimed areas.

8.J.6.3 ***Potential Pollutant Sources.*** (See also Part 6.2.3) For each area of the mine or mill site where stormwater discharges associated with industrial activities occur, document in your SWPPP the types of pollutants (e.g., heavy metals, sediment) likely to be present in significant amounts. For example, phosphate mining facilities will likely need to document pollutants such as selenium, which can be present in significant amounts in their discharges. Consider these factors: the mineralogy of the waste rock (e.g., acid forming); toxicity and quantity of chemicals used, produced, or discharged; the likelihood of contact with stormwater; vegetation of site (if any); and history of significant leaks or spills of toxic or hazardous pollutants. Also include a summary of any existing waste rock or overburden characterization data and test results for potential generation of acid rock drainage.

8.J.6.4 ***Documentation of Control Measures.*** To the extent that you use any of the control measures in Part 8.J.5.2, document them in your SWPPP per Part 6.2.4. If control

measures are implemented or planned but are not listed here (e.g., substituting a less toxic chemical for a more toxic one), include descriptions of them in your SWPPP. If you are in compliance with dust control requirements under state or county air quality permits, you must state (or summarize, as necessary) what the state or county air quality permit dust control requirements are and how you've achieved compliance with them.

8.J.6.5 ***Employee Training***. All employee training(s) conducted in accordance with Part 8.J.5.1 must be documented with the SWPPP.

8.J.6.6 ***Certification of Permit Coverage for Commingled Non-Stormwater Discharges***. If you determine that you are able to certify, consistent with Part 8.J.5.3, that a particular discharge composed of commingled stormwater and non-stormwater is covered under a separate NPDES permit, and that permit subjects the non-stormwater portion to effluent limitations prior to any commingling, you must retain such certification with your SWPPP. This certification must identify the non-stormwater discharges, the applicable NPDES permit(s), the effluent limitations placed on the non-stormwater discharge by the permit(s), and the points at which the limitations are applied.

8.J.7 Additional Inspection Requirements (See also Part 3.1)

Except for earth-disturbing activities conducted prior to active mining activities as defined in Part 8.J.3.2(a) and Part 8.J.3.2(b), which are subject to Part 8.J.4.4, perform inspections at least quarterly unless adverse weather conditions make the site inaccessible. Sites which discharge to waters which are designated as Tier 2 or 2.5 or waters which are impaired for sediment or nitrogen must be inspected monthly. See Part 8.J.9.1 for inspection requirements for inactive and unstaffed sites.

8.J.8 Indicator Monitoring (See also Part 4.2.1)

Table 8.J-1 identifies indicator monitoring that applies to the specific subsectors of Sector J. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.J-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector J (Subsectors J1, J2, and J3) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector J3. Clay, Ceramic, and Refractory Materials (SIC Code 1455, 1459); Chemical and Fertilizer Mineral Mining (SIC Code 1474-1479)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.J.9 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.J-2 identifies benchmarks that apply to the specific subsectors of Sector J. These benchmarks apply to both your primary industrial activity and any co-located industrial activities. Note: There are no Part 8.J.9 monitoring and reporting or impaired waters monitoring requirements for inactive and unstaffed sites.

Table 8.J-2.

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector J1. Sand and Gravel Mining (SIC 1442, 1446)	Nitrate plus Nitrite Nitrogen	0.68 mg/L
	Total Suspended Solids (TSS)	100 mg/L
Subsector J2. Dimension and Crushed Stone and Nonmetallic Minerals (except fuels) (SIC 1411, 1422-1429, 1481, 1499)	Total Suspended Solids (TSS)	100 mg/L

8.J.9.1 ***Inactive and Unstaffed Sites* – Conditional Exemption from No Exposure Requirement for Routine Inspections, Quarterly Visual Assessments, and Indicator, Benchmark, and Impaired Waters Monitoring.** As a Sector J facility, if you are seeking to exercise a waiver from either the routine inspection, quarterly visual assessment or the indicator, benchmark and/or impaired monitoring requirements for inactive and unstaffed sites (including temporarily inactive sites), you are conditionally exempt from the requirement to certify that "there are no industrial materials or activities exposed to stormwater" in Parts 3.1.5, 3.2.4.4, 4.2.1.3, and 4.2.5.2. This exemption is conditioned on the following:

- If circumstances change and your facility becomes active and/or staffed, this exception no longer applies and you must immediately begin complying with the applicable benchmark monitoring requirements as if you were in your first year of permit coverage, and the quarterly visual assessment requirements; and
- EPA retains the authority to revoke this exemption and/or the monitoring waiver where it is determined that the discharge causes, has a reasonable potential to cause, or contributes to an instream excursion above an applicable water quality standard, including designated uses.

Subject to the two conditions above, if your facility is inactive and unstaffed, you are waived from the requirement to conduct routine facility inspections, quarterly visual assessments, and benchmark and impaired waters monitoring. You must still conduct an annual site inspection in accordance with Part 3.1. You are encouraged to inspect your site more frequently where you have reason to believe that severe weather or natural disasters may have damaged control measures or increased discharges.

8.J.10 Effluent Limitations Based on Effluent Limitations Guidelines (See also Part 4.2.3.1)

Table 8.J-3 identifies effluent limits that apply to the industrial activities described below.

Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.J-3		
Industrial Activity	**Parameter**	**Effluent Limitation[1]**
Mine dewatering discharges at crushed stone mining facilities (SIC 1422 - 1429)	pH	6.0 - 9.0
Mine dewatering discharges at construction sand and gravel mining facilities (SIC 1442)	pH	6.0 - 9.0
Mine dewatering discharges at industrial sand mining facilities (SIC 1446)	Total Suspended Solids (TSS)	25 mg/L, monthly avg.
		45 mg/L, daily maximum
	pH	6.0 - 9.0

[1]Monitor annually.

8.J.11 Termination of Permit Coverage

8.J.11.1 ***Termination of Permit Coverage for Sites Reclaimed After December 17, 1990.*** A site or a portion of a site that has been released from applicable state or federal reclamation requirements after December 17, 1990, is no longer required to maintain coverage under this permit. If the site or portion of a site reclaimed after December 17, 1990, was not subject to reclamation requirements, the site or portion of the site is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed as defined in Part 8.J.3.5.

8.J.11.2 ***Termination of Permit Coverage for Sites Reclaimed Before December 17, 1990.*** A site or portion of a site that was released from applicable state or federal reclamation requirements before December 17, 1990, or that was otherwise reclaimed before December 17, 1990, is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed. A site or portion of a site is considered to have been reclaimed if: (1) stormwater that comes into contact with raw materials, intermediate byproducts, finished products, and waste products does not have the potential to cause or contribute to violations of state water quality standards, (2) soil disturbing activities related to mining at the sites or portion of the site have been completed, (3) the site or portion of the site has been stabilized to minimize soil erosion, and (4) as appropriate depending on location, size, and the potential to contribute pollutants to stormwater discharges, the site or portion of the site has been revegetated, will be amenable to natural revegetation, or will be left in a condition consistent with the post-mining land use.

Part 8 – Sector-Specific Requirements for Industrial Activity
Subpart K – Sector K – Hazardous Waste Treatment, Storage, or Disposal Facilities

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.K.1 Covered Stormwater Discharges

The requirements in Subpart K apply to stormwater discharges associated with industrial activity from Hazardous Waste Treatment, Storage, or Disposal facilities (TSDFs) as identified by the Activity Code specified under Sector K in Table D-1 of Appendix D of the permit.

8.K.2 Industrial Activities Covered by Sector K

This permit authorizes stormwater discharges associated with industrial activity from facilities that treat, store, or dispose of hazardous wastes and that are operating under interim status or a permit under subtitle C of RCRA.

Disposal facilities that have been properly closed and capped, and have no significant materials exposed to stormwater, are considered inactive and do not require permits.

8.K.3 Limitations on Coverage

8.K.3.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.3) The following are not authorized by this permit: leachate, gas collection condensate, drained free liquids, contaminated ground water, laboratory-derived wastewater, and contact wash water from washing truck and railcar exteriors and surface areas that have come in direct contact with solid waste at the landfill facility. (EPA includes these prohibited non- stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2.)

8.K.3.2 ***Limitations on Coverage for Facilities Providing Commercial TSDF Services.*** For facilities located in Region 6 (see Appendix C) coverage is limited to hazardous waste TSDFs that are self-generating (including occasionally accepting wastes from community household hazardous waste collection events as public service), handle only residential wastes, and/or only store hazardous wastes and do not treat or dispose of them. Coverage under this permit is not available to commercial waste disposal and treatment facilities located in Region 6 that dispose and treat on a commercial basis any produced hazardous wastes (i.e., not their own) as a service to commercial or industrial generators.

8.K.4 Definitions

8.K.4.1 ***Contaminated stormwater*** – stormwater that comes into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater as defined in Part 8.K.4.4. Some specific areas of a landfill that may produce contaminated stormwater include (but are not limited to) the open face of an active landfill with exposed waste (no cover added); the areas around wastewater treatment operations; trucks, equipment, or machinery that has been in direct contact with the waste; and waste dumping areas.

8.K.4.2 ***Drained free liquids*** – aqueous wastes drained from waste containers (e.g., drums) prior to landfilling.

8.K.4.3 ***Landfill*** – an area of land or an excavation in which wastes are placed for permanent disposal, but that is not a land application or land treatment unit, surface impoundment, underground injection well, waste pile, salt dome formation, salt bed formation, underground mine, or cave as these terms are defined in 40 CFR 257.2, 258.2, and 260.10.

8.K.4.4 ***Landfill wastewater*** – as defined in 40 CFR Part 445 (Landfills Point Source Category), all wastewater associated with, or produced by, landfilling activities except for sanitary wastewater, non-contaminated stormwater, contaminated ground water, and wastewater from recovery pumping wells. Landfill wastewater includes, but is not limited to, leachate, gas collection condensate, drained free liquids, laboratory derived wastewater, contaminated stormwater, and contact wash water from washing truck, equipment, and railcar exteriors and surface areas that have come in direct contact with solid waste at the landfill facility.

8.K.4.5 ***Leachate*** – liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.

8.K.4.6 ***Non-contaminated stormwater*** – stormwater that does not come into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater as defined in Part 8.K.4.4. Non-contaminated stormwater includes stormwater that flows off the cap, cover, intermediate cover, daily cover, and/or final cover of the landfill.

8.K.5 Indicator Monitoring (See also Part 4.2.1)

Table 8.K-1 identifies indicator monitoring that applies to the specific subsectors of Sector K. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.K-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector K (Subsector K1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.K.6 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.K-1 identifies benchmarks that apply to the specific subsectors of Sector K. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.K-1.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector K1. ALL - Industrial Activity Code "HZ" (Note: permit coverage limited in some states). Benchmarks only applicable to discharges not subject to effluent limitations in 40 CFR Part 445 Subpart A (see below).	Ammonia	2.14 mg/L
	Chemical Oxygen Demand (COD)	120 mg/L
	Total Recoverable Arsenic (freshwater) Total Recoverable Arsenic (saltwater)[1]	150 µg/L 69 µg/L
	Total Recoverable Cadmium (freshwater)[2] Total Recoverable Cadmium (saltwater)[1]	Hardness Dependent 33 µg/L
	Total Recoverable Cyanide (freshwater) Total Recoverable Cyanide (saltwater)[1]	22 µg/L 1 µg/L
	Total Recoverable Lead (freshwater)[2] Total Recoverable Lead (saltwater)[1]	Hardness Dependent 210 µg/L
	Total Recoverable Mercury (freshwater) Total Recoverable Mercury (saltwater)[1]	1.4 µg/L 1.8 µg/L
	Total Recoverable Selenium (freshwater) Total Recoverable Selenium (saltwater)[1]	1.5 µg/L for still/standing (lentic) waters; 3.1 µg/L for flowing (lotic) waters 290 µg/L
	Total Recoverable Silver (freshwater)[2] Total Recoverable Silver (saltwater)[1]	Hardness Dependent 1.9 µg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.
[2]The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 4.2.2.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	**Cadmium** (µg/L)	**Lead** (µg/L)	**Silver** (µg/L)
0-24.99 mg/L	0.49	14	0.37
25-49.99 mg/L	0.73	24	0.80
50-74.99 mg/L	1.2	45	1.9

75-99.99 mg/L	1.7	69	3.3
100-124.99 mg/L	2.1	95	5.0
125-149.99 mg/L	2.6	123	7.1
150-174.99 mg/L	3.1	152	9.4
175-199.99 mg/L	3.5	182	12
200-224.99 mg/L	4.0	213	15
225-249.99 mg/L	4.4	246	18
250+ mg/L	4.7	262	20

8.K.7 Effluent Limitations Based on Effluent Limitations Guidelines (See also Part4.2.3.1)

Table 8.K-2 identifies effluent limitations that apply to the industrial activities described below. Compliance with these effluent limitations is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.K-2[1]

Industrial Activity	Parameter	Effluent Limitation
Discharges from hazardous waste landfills subject to effluent limitations in 40 CFR Part 445 Subpart A (see footnote).	Biochemical Oxygen Demand (BOD_5)	220 mg/L, daily maximum
		56 mg/L, monthly avg. maximum
	Total Suspended Solids (TSS)	88 mg/L, daily maximum
		27 mg/L, monthly avg. maximum
	Ammonia	10 mg/L, daily maximum
		4.9 mg/L, monthly avg. maximum
	Alpha Terpineol	0.042 mg/L, daily maximum
		0.019 mg/L, monthly avg. maximum
	Aniline	0.024 mg/L, daily maximum
		0.015 mg/L, monthly avg. maximum
	Benzoic Acid	0.119 mg/L, daily maximum
		0.073 mg/L, monthly avg. maximum
	Naphthalene	0.059 mg/L, daily maximum
		0.022 mg/L, monthly avg. maximum
	p-Cresol	0.024 mg/L, daily maximum
		0.015 mg/L, monthly avg. maximum
	Phenol	0.048 mg/L, daily maximum
		0.029 mg/L, monthly avg. maximum
	Pyridine	0.072 mg/L, daily maximum
		0.025 mg/L, monthly avg. maximum
	Total Arsenic	1.1 mg/L, daily maximum
		0.54 mg/L, monthly avg. maximum
	Total Chromium	1.1 mg/L, daily maximum
		0.46 mg/L, monthly avg. maximum
	Total Zinc	0.535 mg/L, daily maximum
		0.296 mg/L, monthly avg. maximum
	pH	Within the range of 6-9 standard pH units (s.u.)

[1] Monitor annually. As set forth at 40 CFR Part 445 Subpart A, these numeric limitations apply to contaminated stormwater discharges from hazardous waste landfills subject to the provisions of RCRA Subtitle C at 40 CFR Parts 264 (Subpart N) and 265 (Subpart N) except for any of the following facilities:

(a) landfills operated in conjunction with other industrial or commercial operations when the landfill receives only wastes generated by the industrial or commercial operation directly associated with the landfill;
(b) landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes generated by the industrial or commercial operation directly associated with the landfill and also receives other wastes, provided that the other wastes received for disposal are generated by a facility that is subject to the same provisions in 40 CFR Subchapter N as the industrial or commercial operation or that the other wastes received are of similar nature to the wastes generated by the industrial or commercial operation;
(c) landfills operated in conjunction with Centralized Waste Treatment (CWT) facilities subject to 40 CFR Part 437, so long as the CWT facility commingles the landfill wastewater with other non-landfill wastewater for discharge. A landfill directly associated with a CWT facility is subject to this part if the CWT facility discharges landfill wastewater separately from other CWT wastewater or commingles the wastewater from its landfill only with wastewater from other landfills; or
(d) landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes from public service activities, so long as the company owning the landfill does not receive a fee or other remuneration for the disposal service.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart L – Sector L – Landfills, Land Application Sites, and Open Dumps

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.L.1 Covered Stormwater Discharges

The requirements in Subpart L apply to stormwater discharges associated with industrial activity from Landfills and Land Application Sites as identified by the Activity Code specified under Sector L in Table D-1 of Appendix D of the permit.

8.L.2 Industrial Activities Covered by Sector L

This permit may authorize stormwater discharges for Sector L facilities associated with waste disposal at landfills, land application sites that receive or have received industrial waste, including sites subject to regulation under Subtitle D of RCRA. This permit does not cover discharges from landfills that receive only municipal wastes.

8.L.3 Limitations on Coverage

8.L.3.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.3) The following discharges are not authorized by this permit: leachate, gas collection condensate, drained free liquids, contaminated ground water, laboratory wastewater, and contact wash water from washing truck and railcar exteriors and surface areas that have come in direct contact with solid waste at the landfill facility. (EPA includes these prohibited non- stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2.)

8.L.3.2 ***Prohibition Stormwater Discharges from Open Dumps.*** Discharges from open dumps as defined under RCRA are also not authorized under this permit.

8.L.4 Definitions

8.L.4.1 ***Contaminated stormwater*** – stormwater that comes into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater. Some areas of a landfill that may produce contaminated stormwater include (but are not limited to) the open face of an active landfill with exposed waste (no cover added); the areas around wastewater treatment operations; trucks, equipment, or machinery that has been in direct contact with the waste; and waste dumping areas.

8.L.4.2 ***Drained free liquids*** – aqueous wastes drained from waste containers (e.g., drums) prior to landfilling.

8.L.4.3 ***Landfill wastewater*** – as defined in 40 CFR Part 445 (Landfills Point Source Category) all wastewater associated with, or produced by, landfilling activities except for sanitary wastewater, non-contaminated stormwater, contaminated ground water, and wastewater from recovery pumping wells. Landfill process wastewater includes, but is not limited to, leachate; gas collection condensate; drained free liquids; laboratory- derived wastewater; contaminated stormwater; and contact wash water

from washing truck, equipment, and railcar exteriors and surface areas that have come in direct contact with solid waste at the landfill facility.

8.L.4.4 ***Leachate*** – liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.

8.L.4.5 ***Non-contaminated stormwater*** – stormwater that does not come into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater.

8.L.5 Additional Technology-Based Effluent Limits

8.L.5.1 ***Preventive Maintenance Program***. (See also Part 2.1.2.3) As part of your preventive maintenance program, maintain the following: all elements of leachate collection and treatment systems, to prevent commingling of leachate with stormwater; the integrity and effectiveness of any intermediate or final cover (including repairing the cover as necessary), to minimize the effects of settlement, sinking, and erosion.

8.L.5.2 ***Erosion and Sedimentation Control.*** (See also Part 2.1.2.5) Provide temporary stabilization (e.g., temporary seeding, mulching, and placing geotextiles on the inactive portions of stockpiles) for the following in order to minimize discharges of pollutants in stormwater: materials stockpiled for daily, intermediate, and final cover; inactive areas of the landfill or open dump; landfills or open dump areas that have gotten final covers but where vegetation has yet to establish itself; and land application sites where waste application has been completed but final vegetation has not yet been established.

8.L.6 Additional SWPPP Requirements

8.L.6.1 ***Drainage Area Site Map***. (See also Part 6.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or stormwater: active and closed landfill cells or trenches, active and closed land application areas, locations where open dumping is occurring or has occurred, locations of any known leachate springs or other areas where uncontrolled leachate may commingle with stormwater, and leachate collection and handling systems.

8.L.6.2 ***Summary of Potential Pollutant Sources***. (See also Part 6.2.3) Document in your SWPPP the following sources and activities that have potential pollutants associated with them: fertilizer, herbicide, and pesticide application; earth and soil moving; waste hauling and loading or unloading; outdoor storage of significant materials, including daily, interim, and final cover material stockpiles as well as temporary waste storage areas; exposure of active and inactive landfill and land application areas; uncontrolled leachate flows; and failure or leaks from leachate collection and treatment systems.

8.L.7 Additional Inspection Requirements (See also Part 3)

8.L.7.1 ***Inspections of Active Sites.*** Except in arid and semi-arid climates, inspect operating landfills, open dumps, and land application sites at least once every 7 days. Focus on areas of landfills that have not yet been finally stabilized; active land application areas, areas used for storage of material and wastes that are exposed to precipitation, stabilization, and structural control measures; leachate collection and treatment systems; and locations where equipment and waste trucks enter and exit the site. Ensure that sediment and erosion control measures are operating properly. For stabilized sites and areas where land application has been completed, or where the climate is arid or semi-arid, conduct inspections at least once every month.

8.L.7.2 ***Inspections of Inactive Sites.*** Inspect inactive landfills, open dumps, and land application sites at least quarterly. Qualified personnel must inspect landfill (or open dump) stabilization and structural erosion control measures, leachate collection and treatment systems, and all closed land application areas.

8.L.8 Additional Post-Authorization Documentation Requirements

8.L.8.1 ***Recordkeeping and Internal Reporting***. Keep records with your SWPPP of the types of wastes disposed of in each cell or trench of a landfill or open dump. For land application sites, track the types and quantities of wastes applied in specific areas.

8.L.9 Indicator Monitoring (See also Part 4.2.1)

Table 8.L-1 identifies indicator monitoring that applies to the specific subsectors of Sector L. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.L-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector L (Subsectors L1 and L2) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector L2. All Landfill, Land Application Sites and Open Dumps, except Municipal Solid Waste Landfill (MSWLF) Areas Closed in Accordance with 40 CFR 258.60 (Activity Code LF)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.L.10 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.L-2 identifies benchmarks that apply to the specific subsectors of Sector L. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.L-2.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration1**
Subsector L1. All Landfill, Land Application Sites and Open Dumps (Industrial Activity Code "LF")	Total Suspended Solids (TSS)	100 mg/L

[1]Benchmark monitoring required only for discharges not subject to effluent limitations in 40 CFR Part 445 Subpart B (see Table L-3 below).

8.L.11 Effluent Limitations Based on Effluent Limitations Guidelines (See also Part 4.2.3.1)

Table 8.L-3 identifies effluent limitations that apply to the industrial activities described below. Compliance with these effluent limitations is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.L-3[1]		
Industrial Activity	**Parameter**	**Effluent Limitation**
Discharges from non-hazardous waste landfills subject to effluent limitations in 40 CFR Part 445 Subpart B.	Biochemical Oxygen Demand (BOD_5)	140 mg/L, daily maximum
		37 mg/L, monthly avg. maximum
	Total Suspended Solids (TSS)	88 mg/L, daily maximum
		27 mg/L, monthly avg. maximum
	Ammonia	10 mg/L, daily maximum
		4.9 mg/L, monthly avg. maximum
	Alpha Terpineol	0.033 mg/L, daily maximum
		0.016 mg/L monthly avg. maximum
	Benzoic Acid	0.12 mg/L, daily maximum
		0.071 mg/L, monthly avg. maximum
	p-Cresol	0.025 mg/L, daily maximum
		0.014 mg/L, monthly avg. maximum
	Phenol	0.026 mg/L, daily maximum
		0.015 mg/L, monthly avg. maximum
	Total Zinc	0.20 mg/L, daily maximum
		0.11 mg/L, monthly avg. maximum
	pH	Within the range of 6-9 standard pH units (s.u.)

[1] Monitor annually. As set forth at 40 CFR Part 445 Subpart B, these numeric limitations apply to contaminated stormwater discharges from MSWLFs that have not been closed in accordance with 40 CFR 258.60, and to contaminated stormwater discharges from those landfills that are subject to the provisions of 40 CFR Part 257 except for discharges from any of the following facilities:

(a) landfills operated in conjunction with other industrial or commercial operations, when the landfill receives only wastes generated by the industrial or commercial operation directly associated with the landfill;
(b) landfills operated in conjunction with other industrial or commercial operations, when the landfill receives wastes generated by the industrial or commercial operation directly associated with the landfill and also receives other wastes, provided that the other wastes received for disposal are generated by a facility that is subject to the same provisions in 40 CFR Subchapter N as the industrial or commercial operation, or that the other wastes received are of similar nature to the wastes generated by the industrial or commercial operation;
(c) landfills operated in conjunction with CWT facilities subject to 40 CFR Part 437, so long as the CWT facility commingles the landfill wastewater with other non-landfill wastewater for discharge. A landfill directly

associated with a CWT facility is subject to this part if the CWT facility discharges landfill wastewater separately from other CWT wastewater or commingles the wastewater from its landfill only with wastewater from other landfills; or

(d) landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes from public service activities, so long as the company owning the landfill does not receive a fee or other remuneration for the disposal service.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart M – Sector M – Automobile Salvage Yards

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.M.1 Covered Stormwater Discharges

The requirements in Subpart M apply to stormwater discharges associated with industrial activity from Automobile Salvage Yards as identified by the SIC Code specified under Sector M in Table D-1 of Appendix D of this permit.

8.M.2 Additional Technology-Based Effluent Limits

8.M.2.1 ***Spill and Leak Prevention Procedures.*** (See also Part 2.1.2.4) Drain vehicles intended to be dismantled of all fluids upon arrival at the site (or as soon thereafter as practicable), or employ some other equivalent means to prevent spills and leaks.

8.M.2.2 ***Employee Training.*** (See also Part 2.1.2.8) If applicable to your facility, address the following areas (at a minimum) in your employee training program: proper handling (collection, storage, and disposal) of oil, used mineral spirits, anti-freeze, mercury switches, and solvents.

8.M.2.3 ***Management of Stormwater.*** (See also Part 2.1.2.6) Implement control measures to minimize discharges of pollutants in stormwater such as the following, where determined to be feasible (list not exclusive): berms or drainage ditches on the property line (to help prevent run-on from neighboring properties); berms for uncovered outdoor storage of oily parts, engine blocks, and above-ground liquid storage; installation of detention ponds; and installation of filtering devices and oil and water separators.

8.M.3 Additional SWPPP Requirements

8.M.3.1 ***Drainage Area Site Map.*** (See also Part 6.2.2) Identify locations used for dismantling, storing, and maintaining used motor vehicle parts. Also identify where any of the following may be exposed to precipitation or stormwater: dismantling areas, parts (e.g., engine blocks, tires, hub caps, batteries, hoods, mufflers) storage areas, and liquid storage tanks and drums for fuel and other fluids.

8.M.3.2 ***Potential Pollutant Sources.*** (See also Part 6.2.3) Assess the potential for the following to contribute pollutants to stormwater discharges: vehicle storage areas, dismantling areas, parts storage areas (e.g., engine blocks, tires, hub caps, batteries, hoods, mufflers), and fueling stations.

8.M.4 Additional Inspection Requirements (See also Part 3.1)

Immediately (or as soon thereafter as practicable) inspect vehicles arriving at the site for leaks. Inspect quarterly for signs of leakage all equipment containing oily parts, hydraulic fluids, any other types of fluids, or mercury switches. Also, inspect quarterly for signs of leakage all vessels and areas where hazardous materials and general automotive fluids are stored, including, but not limited to, mercury switches, brake fluid, transmission fluid, radiator water, and antifreeze.

8.M.5 Indicator Monitoring (See also Part 4.2.1)

Table 8.M-1 identifies indicator monitoring that applies to the specific subsectors of Sector M. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.M-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector M (Subsector M1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector M1. Automobile Salvage Yards (SIC Code 5015)	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.M.6 Sector-Specific Benchmarks (See also Part 4.2.3)

Table 8.M-2 identifies benchmarks that apply to Sector M. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.M-2.

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector M1. Automobile Salvage Yards (SIC 5015)	Total Suspended Solids (TSS)	100 mg/L
	Total Recoverable Aluminum	1,100 µg/L
	Total Recoverable Lead (freshwater)[2] Total Recoverable Lead (saltwater)[1]	Hardness Dependent 210 µg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.

[2]The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 4.2.2.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	**Lead** (µg/L)
0-24.99 mg/L	14
25-49.99 mg/L	24
50-74.99 mg/L	45
75-99.99 mg/L	69
100-124.99 mg/L	95
125-149.99 mg/L	123
150-174.99 mg/L	152
175-199.99 mg/L	182
200-224.99 mg/L	213
225-249.99 mg/L	246
250+ mg/L	262

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart N – Sector N – Scrap Recycling and Waste Recycling Facilities

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.N.1 Covered Stormwater Discharges

The requirements in Subpart N apply to stormwater discharges associated with industrial activity from Scrap Recycling and Waste Recycling facilities as identified by the SIC Code specified under Sector N in Table D-1 of Appendix D of the permit.

8.N.2 Limitation on Coverage

Separate permit requirements have been established for recycling facilities that receive, process, and do wholesale distribution of only source-separated recyclable materials primarily from non-industrial and residential sources (i.e., common consumer products including paper, newspaper, glass, cardboard, plastic containers, and aluminum and tin cans). This includes recycling facilities commonly referred to as material recovery facilities (MRF). See Part 8.N.3.3.

8.N.2.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.3) Non-stormwater discharges from turnings containment areas are not covered by this permit (see also Part 8.N.3.1.3). Discharges from containment areas in the absence of a storm event are prohibited unless covered by a separate NPDES permit. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2.)

8.N.3 Additional Technology-Based Effluent Limits

8.N.3.1 ***Scrap and Waste Recycling Facilities (Non-Source Separated, Nonliquid Recyclable Materials).*** The following requirements are for facilities that receive, process, and do wholesale distribution of non-source separated, nonliquid recyclable wastes (e.g., ferrous and nonferrous metals, plastics, glass, cardboard, and paper). These facilities may receive both nonrecyclable and recyclable materials. This section is not intended for those facilities that accept recyclables only from primarily non-industrial and residential sources.

8.N.3.1.1 ***Inbound Recyclable and Waste Material Control Program.*** Minimize the chance of accepting materials that could be significant sources of pollutants by conducting inspections of inbound recyclables and waste materials and through implementation of control measures such as the following, where determined to be feasible (list not exclusive): providing information and education to suppliers of scrap and recyclable waste materials on draining and properly disposing of residual fluids (e.g., from vehicles and equipment engines, radiators and transmissions, oil filled transformers, and individual containers or drums) and removal of mercury switches from vehicles before delivery to your facility; establishing procedures to minimize the potential of any residual fluids from coming into contact with precipitation or stormwater; establishing procedures for accepting scrap lead-acid batteries (additional requirements for the

handling, storage, and disposal or recycling of batteries are contained in the scrap lead-acid battery program provisions in Part 8.N.3.1.6); providing training targeted for those personnel engaged in the inspection and acceptance of inbound recyclable materials; and establishing procedures to ensure that liquid wastes, including used oil, are stored in materially compatible and non-leaking containers and are disposed of or recycled in accordance with the Resource Conservation and Recovery Act (RCRA).

8.N.3.1.2 ***Scrap and Waste Material Stockpiles and Storage (Outdoor).*** Minimize contact of stormwater with stockpiled materials, processed materials, and nonrecyclable wastes through implementation of control measures such as the following, where determined to be feasible (list not exclusive): permanent or semi-permanent covers; sediment traps, vegetated swales and strips, catch basin filters, and sand filters to facilitate settling or filtering of pollutants; dikes, berms, containment trenches, culverts, and surface grading to divert stormwater from storage areas; silt fencing; and oil and water separators, sumps, and dry absorbents for areas where potential sources of residual fluids are stockpiled (e.g., automobile engine storage areas).

8.N.3.1.3 ***Stockpiling of Turnings Exposed to Cutting Fluids (Outdoor Storage).*** Minimize contact of stormwater with residual cutting fluids by storing all turnings exposed to cutting fluids under some form of permanent or semi-permanent cover, or establishing dedicated containment areas for all turnings that have been exposed to cutting fluids. Any containment areas must be constructed of concrete, asphalt, or other equivalent types of impermeable material and include a barrier (e.g., berms, curbing, elevated pads) to prevent contact with stormwater run-on. Stormwater from these areas can be discharged, provided that any stormwater is first collected and treated by an oil and water separator or its equivalent. You must regularly maintain the oil and water separator (or its equivalent) and properly dispose of or recycle collected residual fluids.

8.N.3.1.4 ***Scrap and Waste Material Stockpiles and Storage (Covered or Indoor Storage).*** Minimize contact of residual liquids and particulate matter from materials stored indoors or under cover with stormwater through implementation of control measures such as the following, where determined to be feasible (list not exclusive): good housekeeping measures, including the use of dry absorbents or wet vacuuming to contain, dispose of, or recycle residual liquids originating from recyclable containers, and mercury spill kits for spills from storage of mercury switches; not allowing wash water from tipping floors or other processing areas to discharge to the storm sewer system; and disconnecting or sealing off all floor drains connected to the storm sewer system.

8.N.3.1.5 ***Scrap and Recyclable Waste Processing Areas***. Minimize stormwater from coming in contact with scrap processing equipment. Pay attention to operations that generate visible amounts of particulate residue (e.g., shredding) to minimize the contact of accumulated particulate matter and residual fluids with stormwater (i.e., through good housekeeping, preventive maintenance). To minimize discharges of pollutants in stormwater from scrap and recyclable waste processing areas, implement control measures such as the following, where determined to be feasible (list not exclusive): at least once per month inspecting equipment for spills

or leaks and malfunctioning, worn, or corroded parts or equipment; establishing a preventive maintenance program for processing equipment; using dry-absorbents or other cleanup practices to collect and dispose of or recycle spilled or leaking fluids or use mercury spill kits for spills from storage of mercury switches; on unattended hydraulic reservoirs over 150 gallons in capacity, installing protection devices such as low-level alarms or equivalent devices, or secondary containment that can hold the entire volume of the reservoir; implementing containment or diversion structures such as dikes, berms, culverts, trenches, elevated concrete pads, and grading to minimize contact of stormwater with outdoor processing equipment or stored materials; using oil and water separators or sumps; installing permanent or semi-permanent covers in processing areas where there are residual fluids and grease; and using retention or detention ponds or basins, sediment traps, vegetated swales or strips, and/or catch basin filters or sand filters for pollutant settling and filtration.

8.N.3.1.6 ***Scrap Lead-Acid Battery Program.*** To minimize the discharge of pollutants in stormwater from lead-acid batteries, properly handle, store, and dispose of scrap lead-acid batteries, and implement control measures such as the following, where determined to be feasible (list not exclusive): segregating scrap lead-acid batteries from other scrap materials; properly handling, storing, and disposing of cracked or broken batteries; collecting and disposing of leaking lead-acid battery fluid; minimizing or eliminating (if possible) exposure of scrap lead-acid batteries to precipitation or stormwater; and providing employee training for the management of scrap batteries.

8.N.3.1.7 ***Spill Prevention and Response Procedures.*** (See also Part 2.1.2.4) Install alarms and/or pump shutoff systems on outdoor equipment with hydraulic reservoirs exceeding 150 gallons in the event of a line break. Alternatively, a secondary containment system capable of holding the entire contents of the reservoir plus room for precipitation can be used. Use a mercury spill kit for any release of mercury from switches, anti-lock brake systems, and switch storage areas.

8.N.3.1.8 ***Supplier Notification Program.*** As appropriate, notify major suppliers which scrap materials will not be accepted at the facility or will be accepted only under certain conditions.

8.N.3.2 *Waste Recycling Facilities (Liquid Recyclable Materials)*

8.N.3.2.1 ***Waste Material Storage (Indoor).*** Minimize or eliminate contact between residual liquids from waste materials stored indoors and from stormwater . The plan may refer to applicable portions of other existing plans, such as Spill Prevention, Control, and Countermeasure (SPCC) plans required under 40 CFR Part 112. To minimize discharges of pollutants in stormwater from indoor waste material storage areas, implement control measures such as the following, where determined to be feasible (list not exclusive): implementing procedures for material handling (including labeling and marking); cleaning up spills and leaks with dry absorbent materials and/or a wet vacuum system; installing appropriate containment structures (e.g., trenching, curbing, gutters, etc.); and installing a drainage system, including appurtenances (e.g., pumps or ejectors, manually operated valves), to handle discharges from diked or bermed areas. Drainage

should be discharged to an appropriate treatment facility or sanitary sewer system, or otherwise disposed of properly. These discharges may require coverage under a separate NPDES wastewater permit or industrial user permit under the pretreatment program.

8.N.3.2.2 ***Waste Material Storage (Outdoor).*** Minimize contact between stored residual liquids and precipitation or stormwater. The plan may refer to applicable portions of other existing plans, such as SPCC plans required under 40 CFR Part 112.

Discharges of stormwater from containment areas containing used oil must also be in accordance with applicable sections of 40 CFR Part 112. To minimize discharges of pollutants in stormwater from outdoor waste material storage areas, implement control measures such as the following, where determined to be feasible (list not exclusive): appropriate containment structures (e.g., dikes, berms, curbing, pits) to store the volume of the largest tank, with sufficient extra capacity for precipitation; drainage control and other diversionary structures; corrosion protection and/or leak detection systems for storage tanks; and dry-absorbent materials or a wet vacuum system to collect spills.

8.N.3.2.3 ***Trucks and Rail Car Waste Transfer Areas.*** Minimize pollutants in stormwater discharges from truck and rail car loading and unloading areas. Include measures to clean up minor spills and leaks resulting from the transfer of liquid wastes. To minimize discharges of pollutants in stormwater from truck and rail car waste transfer areas, implement control measures such as the following, where determined to be feasible (list not exclusive): containment and diversionary structures to minimize contact with precipitation or stormwater; and dry clean-up methods, wet vacuuming, roof coverings, and/or stormwater controls.

8.N.3.3 ***Recycling Facilities (Source-Separated Materials).*** The following requirements are for facilities that receive only source-separated recyclables, primarily from non-industrial and residential sources.

8.N.3.3.1 ***Inbound Recyclable Material Control.*** Minimize the chance of accepting nonrecyclables (e.g., hazardous materials) that could be a significant source of pollutants by conducting inspections of inbound materials and through the implementation of control measures such as the following, where determined to be feasible (list not exclusive): providing information and education measures to inform suppliers of recyclables about acceptable and non- acceptable materials; training drivers responsible for pickup of recycled material; clearly marking public drop-off containers regarding which materials can be accepted; rejecting nonrecyclable wastes or household hazardous wastes at the source; and establishing procedures for handling and disposal of nonrecyclable material.

8.N.3.3.2 ***Outdoor Storage.*** Minimize exposure of recyclables to precipitation and stormwater by using good housekeeping measures to prevent accumulation of particulate matter and fluids, particularly in high traffic areas and through implementation of control measure such as the following, where determined to be feasible (list not exclusive): providing totally enclosed drop-off containers for the public; installing a sump and pump with each container pit and treat or discharge collected fluids to a sanitary sewer system; providing dikes and curbs for secondary

containment (e.g., around bales of recyclable waste paper); diverting stormwater away from outside material storage areas; providing covers over containment bins, dumpsters, and roll-off boxes; and storing the equivalent of one day's volume of recyclable material indoors.

8.N.3.3.3 ***Indoor Storage and Material Processing.*** Minimize the release of pollutants from indoor storage and processing areas through implementation of control measures such as the following, where determined to be feasible (list not exclusive): scheduling routine good housekeeping measures for all storage and processing areas; prohibiting tipping floor wash water from draining to the storm sewer system; and providing employee training on pollution prevention practices.

8.N.3.3.4 ***Vehicle and Equipment Maintenance.*** Minimize the discharge of pollutants in stormwater from areas where vehicle and equipment maintenance occur outdoors through implementation of control measures such as the following, where determined to be feasible (list not exclusive): minimizing or eliminating outdoor maintenance areas; establishing spill prevention and clean-up procedures in fueling areas; avoiding topping off fuel tanks; diverting stormwater from fueling areas; storing lubricants and hydraulic fluids indoors; and providing employee training on proper handling and storage of hydraulic fluids and lubricants.

8.N.4 **Additional SWPPP Requirements**

8.N.4.1 ***Drainage Area Site Map.*** (See also Part 6.2.2) Document in your SWPPP the locations of any of the following activities or sources that may be exposed to precipitation or stormwater: scrap and waste material storage; outdoor scrap and waste processing equipment; and containment areas for turnings exposed to cutting fluids.

8.N.4.2 ***Maintenance Schedules/Procedures for Collection, Handling, and Disposal or Recycling of Residual Fluids at Scrap and Waste Recycling Facilities.*** If you are subject to Part 8.N.3.1.3, your SWPPP must identify any applicable maintenance schedule and the procedures to collect, handle, and dispose of or recycle residual fluids.

8.N.5 **Additional Inspection Requirements**

8.N.5.1 ***Inspections for Waste Recycling Facilities.*** The inspections must be performed quarterly, per Part 3.1, and include, at a minimum, all areas where waste is generated, received, stored, treated, or disposed of and that are exposed to either precipitation or stormwater.

8.N.6 **Indicator Monitoring (See also Part 4.2.1)**

Table 8.N-1 identifies indicator monitoring that applies to the specific subsectors of Sector N. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.N-1		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Indicator Monitoring Parameter**	**Indicator Monitoring Threshold**
Applies to all Sector N (Subsectors N1 and N2) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector N2. Source-separated Recycling Facility (SIC Code 5093)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

8.N.7 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.N-2 identifies benchmarks that apply to Sector N. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.N-2.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector N1. Scrap Recycling and Waste Recycling Facilities except those only receiving source-separate recyclable materials primarily from non-industrial and residential sources (SIC 5093)	Chemical Oxygen Demand (COD)	120 mg/L
	Total Suspended Solids (TSS)	100 mg/L
	Total Recoverable Aluminum	1,100 µg/L
	Total Recoverable Copper (freshwater)[2] Total Recoverable Copper (saltwater)[1]	5.19 µg/L 4.8 µg/L
	Total Recoverable Lead (freshwater)[2] Total Recoverable Lead (saltwater)[1]	Hardness Dependent 210 µg/L
	Total Recoverable Zinc (freshwater)[2] Total Recoverable Zinc (saltwater)[1]	Hardness Dependent 90 µg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.
[2]The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 4.2.2.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	Lead	Zinc
0-24.99 mg/L	14	37
25-49.99 mg/L	24	52
50-74.99 mg/L	45	80
75-99.99 mg/L	69	107
100-124.99 mg/L	95	132
125-149.99 mg/L	123	157
150-174.99 mg/L	152	181
175-199.99 mg/L	182	204
200-224.99 mg/L	213	227
225-249.99 mg/L	246	249
250+ mg/L	262	260

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart O – Sector O – Steam Electric Generating Facilities

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.O.1 Covered Stormwater Discharges

The requirements in Subpart O apply to stormwater discharges associated with industrial activity from Steam Electric Power Generating Facilities as identified by the Activity Code specified under Sector O in Table D-1 of Appendix D.

8.O.2 Industrial Activities Covered by Sector O

This permit authorizes stormwater discharges from the following industrial activities at Sector O facilities:

8.O.2.1 ***Steam electric power generation using coal, natural gas, oil, nuclear energy, etc., to produce a steam source, including coal handling areas (does not include geothermal power);***

8.O.2.2 ***Coal pile runoff, including effluent limitations established by 40 CFR Part 423;***

8.O.2.3 ***Dual fuel facilities that could employ a steam boiler.***

8.O.3 Limitations on Coverage

8.O.3.1 ***Prohibition of Non-Stormwater Discharges.*** Non-stormwater discharges subject to effluent limitations guidelines are not covered by this permit. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2.)

8.O.3.2 ***Prohibition of Stormwater Discharges.*** Stormwater discharges from the following are not covered by this permit:

8.O.3.2.1 ***Ancillary facilities (e.g., fleet centers and substations) that are not contiguous to a steam electric power generating facility;***

8.O.3.2.2 ***Gas turbine facilities (provided the facility is not a dual-fuel facility that includes a steam boiler), and combined-cycle facilities where no supplemental fuel oil is burned (and the facility is not a dual-fuel facility that includes a steam boiler);***

8.O.3.2.3 ***Cogeneration (combined heat and power) facilities utilizing a gas turbine.***

8.O.4 **Additional Technology-Based Effluent Limits.** The following good housekeeping measures are required in addition to Part 2.1.2.2:

8.O.4.1 ***Fugitive Dust Emissions.*** Minimize fugitive dust emissions from coal handling areas to minimize the tracking of coal dust offsite that could be discharged in stormwater through implementation of control measures such as the following, where determined to be feasible, (list not exclusive): installing specially designed tires; and

washing vehicles in a designated area before they leave the site and controlling the wash water.

8.O.4.2 ***Delivery Vehicles.*** Minimize contamination of stormwater from delivery vehicles arriving at the plant site. Implement procedures to inspect delivery vehicles arriving at the plant site as necessary to minimize discharges of pollutants in stormwater. Ensure the overall integrity of the body or container of the delivery vehicle and implement procedures to deal with leakage or spillage from delivery vehicles.

8.O.4.3 ***Fuel Oil Unloading Areas.*** Minimize contamination of precipitation or stormwater from fuel oil unloading areas. Use containment curbs in unloading areas where feasible. In addition, ensure personnel familiar with spill prevention and response procedures are available to respond expeditiously in the event of a leak or spill during deliveries. Ensure that any leaks or spills are immediately contained and cleaned up, and use spill and overflow protection devices (e.g., drip pans, drip diapers, or other containment devices placed beneath fuel oil connectors to contain potential spillage during deliveries or from leaks at the connectors).

8.O.4.4 ***Chemical Loading and Unloading.*** Minimize contamination of precipitation or stormwater from chemical loading and unloading areas. Use containment curbs at chemical loading and unloading areas to contain spills, where practicable. In addition, ensure personnel familiar with spill prevention and response procedures are available to respond expeditiously in the event of a leak or spill during deliveries. Ensure leaks and spills are immediately contained and cleaned up and, where practicable, load and unload in covered areas and store chemicals indoors.

8.O.4.5 ***Miscellaneous Loading and Unloading Areas.*** Minimize contamination of precipitation or stormwater from loading and unloading areas through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering the loading area; grading, curbing, or berming around the loading area to divert run-on; locating the loading and unloading equipment and vehicles so that leaks are contained in existing containment and flow diversion systems; or equivalent procedures.

8.O.4.6 ***Liquid Storage Tanks.*** Minimize contamination of stormwater from above-ground liquid storage tanks through implementation of control measures such as the following, where determined to be feasible, the following (list not exclusive): using protective guards around tanks; using containment curbs; installing spill and overflow protection; using dry cleanup methods; or equivalent measures.

8.O.4.7 ***Large Bulk Fuel Storage Tanks.*** Minimize contamination of stormwater from large bulk fuel storage tanks. Use containment berms (or their equivalent). You must also comply with applicable state and federal laws, including Spill Prevention, Control and Countermeasure (SPCC) Plan requirements.

8.O.4.8 ***Spill Reduction Measures***. Minimize the potential for an oil or chemical spill, or reference the appropriate part of your SPCC plan. Visually inspect as part of your routine facility inspection the structural integrity of all above-ground tanks, pipelines, pumps, and related equipment that may be exposed to stormwater, and make any necessary repairs immediately.

8.O.4.9 ***Oil-Bearing Equipment in Switchyards.*** Minimize contamination of stormwater from oil-bearing equipment in switchyard areas. Use level grades and gravel surfaces to retard flows and limit the spread of spills, or collect stormwater in perimeter ditches.

8.O.4.10 ***Residue-Hauling Vehicles.*** Inspect all residue-hauling vehicles for proper covering over the load, adequate gate sealing, and overall integrity of the container body. Repair vehicles without load covering or adequate gate sealing, or with leaking containers or beds.

8.O.4.11 ***Ash Loading Areas.*** Reduce or control the tracking of ash and residue from ash loading areas. Clear the ash building floor and immediately adjacent roadways of spillage, debris, and excess water as necessary to minimize discharges of pollutants in stormwater.

8.O.4.12 ***Areas Adjacent to Disposal Ponds or Landfills***. Minimize contamination of stormwater from areas adjacent to disposal ponds or landfills. Reduce ash residue that may be tracked on to access roads traveled by residue handling vehicles, and reduce ash residue on exit roads leading into and out of residue handling areas.

8.O.4.13 ***Landfills, Scrap Yards, Surface Impoundments, Open Dumps, General Refuse Sites.*** Minimize the potential for contamination of stormwater from these areas.

8.O.5 Additional SWPPP Requirements

8.O.5.1 ***Drainage Area Site Map.*** (See also Part 6.2.2) Document in your SWPPP the locations of any of the following activities or sources that may be exposed to precipitation or stormwater: storage tanks, scrap yards, and general refuse areas; short- and long-term storage of general materials (including but not limited to supplies, construction materials, paint equipment, oils, fuels, used and unused solvents, cleaning materials, paint, water treatment chemicals, fertilizer, and pesticides); landfills and construction sites; and stock pile areas (e.g., coal or limestone piles).

8.O.5.2 ***Documentation of Good Housekeeping Measures***. You must document in your SWPPP the good housekeeping measures implemented to meet the effluent limits in Part 8.O.4.

8.O.6 Additional Inspection Requirements

As part of your inspection, inspect the following areas monthly: coal handling areas, loading or unloading areas, switchyards, fueling areas, bulk storage areas, ash handling areas, areas adjacent to disposal ponds and landfills, maintenance areas, liquid storage tanks, and long term and short term material storage areas.

8.O.7 Indicator Monitoring (See also Part 4.2.1)

Table 8.O-1 identifies indicator monitoring that applies to the specific subsectors of Sector O. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.O-1		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Indicator Monitoring Parameter**	**Indicator Monitoring Threshold**
Applies to all Sector O (Subsector O1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector O1. Steam Electric Generating Facilities, including coal handling sites (SIC Code SE)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values
	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.O.8 Effluent Limitations Based on Effluent Limitations Guidelines (See also Part4.2.3.1)

Table 8.O-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.O-2[1]		
Industrial Activity	**Parameter**	**Effluent Limitation**
Discharges from coal storage piles at Steam Electric Generating Facilities	TSS	50 mg/l[2]
	pH	6.0 min - 9.0 max

[1] Monitor annually.

[2] If your facility is designed, constructed, and operated to treat the volume of coal pile runoff that is associated with a 10-year, 24-hour rainfall event, any untreated overflow of coal pile runoff from the treatment unit is not subject to the 50 mg/L limitation for total suspended solids.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart P – Sector P – Land Transportation and Warehousing

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.P.1 Covered Stormwater Discharges

The requirements in Subpart P apply to stormwater discharges associated with industrial activity from Land Transportation and Warehousing facilities as identified by the SIC Codes specified under Sector P in Table D-1 of Appendix D of the permit.

8.P.2 Limitation on Coverage

8.P.2.1 ***Prohibited Discharges*** (see also Parts 1.1.3 and 8.P.3.1.4) This permit does not authorize the discharge of vehicle/equipment/surface wash water, including tank cleaning operations. Such discharges must be authorized under a separate NPDES permit, discharged to a sanitary sewer in accordance with applicable industrial pretreatment requirements, or recycled on-site.

8.P.3 Additional Technology-Based Effluent Limits

8.P.3.1 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2) In addition to the Good Housekeeping requirements in Part 2.1.2.2, you must do the following.

8.P.3.1.1 ***Vehicle and Equipment Storage Areas***. Minimize the potential for stormwater exposure to leaky or leak-prone vehicles/equipment awaiting maintenance through implementation of control measures such as the following, where determined to be feasible (list not exclusive): using of drip pans under vehicles/equipment; storing vehicles and equipment indoors; installing berms or dikes; using of absorbents; roofing or covering storage areas; and cleaning pavement surfaces to remove oil and grease.

8.P.3.1.2 ***Fueling Areas.*** Minimize contamination of stormwater from fueling areas through implementation of control measures such as the following, where determined to be feasible: covering the fueling area; using spill/overflow protection and cleanup equipment; minimizing stormwater run-on/discharges to the fueling area; using dry cleanup methods; and treating and/or recycling collected stormwater.

8.P.3.1.3 ***Material Storage Areas***. Maintain all material storage vessels (e.g., for used oil/oil filters, spent solvents, paint wastes, hydraulic fluids) to prevent contamination of stormwater and plainly label them (e.g., "Used Oil," "Spent Solvents"). To minimize discharges of pollutants in stormwater from material storage areas, implement control measures such as the following, where determined to be feasible (list not exclusive): storing the materials indoors; installing berms/dikes around the areas; minimizing discharges of stormwater to the areas; using dry cleanup methods; and treating and/or recycling collected stormwater.

8.P.3.1.4 ***Vehicle and Equipment Cleaning Areas.*** Minimize contamination of stormwater from all areas used for vehicle/equipment cleaning through

implementation of control measures such as the following, where determined to be feasible (list not exclusive): performing all cleaning operations indoors; covering the cleaning operation, ensuring that all wash water drains to a proper collection system (i.e., not the stormwater drainage system); treating and/or recycling collected wash water; or other equivalent measures.

Discharges of vehicle and equipment wash water, including tank cleaning operations, are not authorized by this permit for this sector.

8.P.3.1.5 ***Vehicle and Equipment Maintenance Areas.*** Minimize contamination of stormwater from all areas used for vehicle/equipment maintenance through implementation of control measures such as the following, where determined to be feasible (list not exclusive): performing maintenance activities indoors; using drip pans; keeping an organized inventory of materials used in the shop; draining all parts of fluid prior to disposal; prohibiting wet clean up practices if these practices would result in the discharge of pollutants to stormwater drainage systems; using dry cleanup methods; treating and/or recycling collected stormwater; and minimizing run on/discharges of stormwater to maintenance areas.

8.P.3.1.6 ***Locomotive Sanding (Loading Sand for Traction)*** Areas. Minimize discharges of pollutants in stormwater from locomotive sanding areas through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering sanding areas; minimizing stormwater run on/discharges; or appropriate sediment removal practices to minimize the offsite transport of sanding material by stormwater.

8.P.3.2 ***Employee Training.*** (See also Part 2.1.2.8) Train personnel at least once a year and address the following activities, as applicable: used oil and spent solvent management; fueling procedures; general good housekeeping practices; proper painting procedures; and used battery management.

8.P.4 **Additional SWPPP Requirements**

8.P.4.1 ***Drainage Area Site Map.*** (See also Part 6.2.2) Identify in the SWPPP the following areas of the facility and indicate whether activities occurring there may be exposed to precipitation/stormwater: fueling stations; vehicle/equipment maintenance or cleaning areas; storage areas for vehicle/equipment with actual or potential fluid leaks; loading/unloading areas; areas where treatment, storage or disposal of wastes occur; liquid storage tanks; processing areas; and storage areas.

8.P.4.2 ***Potential Pollutant Sources.*** (See also Part 6.2.3) Assess the potential for the following activities and facility areas to contribute pollutants to stormwater discharges: onsite waste storage or disposal; dirt/gravel parking areas for vehicles awaiting maintenance; illicit plumbing connections between shop floor drains and the stormwater conveyance system(s); and fueling areas. Describe these activities in the SWPPP.

8.P.4.2.1 ***Description of Good Housekeeping Measures.*** You must document in your SWPPP the good housekeeping measures you implement consistent with Part 8.P.3.

8.P.4.2.2 ***Vehicle and Equipment Wash Water Requirements.*** If wash water is handled in a manner that does not involve separate NPDES permitting

(e.g., hauled offsite), describe the disposal method and include all pertinent information (e.g., frequency, volume, destination, etc.) in your SWPPP. Discharges of vehicle and equipment wash water, including tank cleaning operations, are not authorized by this permit for this sector.

8.P.5 Additional Inspection Requirements (See also Part 3.1)

Inspect all the following areas/activities: storage areas for vehicles/equipment awaiting maintenance, fueling areas, indoor and outdoor vehicle/equipment maintenance areas, material storage areas, vehicle/equipment cleaning areas and loading/unloading areas.

8.P.6 Indicator Monitoring (See also Part 4.2.1)

Table 8.P-1 identifies indicator monitoring that applies to the specific subsectors of Sector P. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.P-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector P (Subsector P1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector P1. Railroad Transportation (SIC Code 4011, 4013); Local and Highway Passenger Transportation (SIC Code 4111-4173); Motor Freight Transportation and Warehousing (SIC Code 4212-4231); United States Postal Service (SIC Code 4311); Petroleum Bulk Stations and Terminals (SIC Code 5171)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values
Subsector P1. Railroad Transportation (SIC Code 4011, 4013); Petroleum Bulk Stations and Terminals (SIC Code 5171)	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart Q – Sector Q – Water Transportation

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.Q.1 Covered Stormwater Discharges

The requirements in Subpart Q apply to stormwater discharges associated with industrial activity from Water Transportation facilities as identified by the SIC Codes specified under Sector Q in Table D-1 of Appendix D of the permit.

8.Q.2 Limitations on Coverage

8.Q.2.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.3) The following are not authorized by this permit: discharges from vessels including bilge and ballast water, sanitary wastes, pressure wash water, and cooling water. Any discharge of pollutants from a point source to a water of the U.S. requires coverage under an NPDES permit. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2.)

8.Q.3 Additional Technology-Based Effluent Limits

8.Q.3.1 ***Good Housekeeping Measures.*** You must implement the following good housekeeping measures in addition to the requirements of Part 2.1.2.2:

8.Q.3.1.1 ***Pressure Washing Area***. If pressure washing is used to remove marine growth from vessels, the discharge water must be permitted by a separate NPDES permit. Collect or contain the discharges from the pressure washing area so that they are not commingled with stormwater discharges authorized by this permit.

8.Q.3.1.2 ***Blasting and Painting Area***. Minimize the potential for spent abrasives, paint chips, and overspray to be discharged into receiving waters or the storm sewer system. Contain all blasting and painting activities, or use other measures, to minimize the discharge of contaminants (e.g., hanging plastic barriers or tarpaulins during blasting or painting operations to contain debris). At least once per month, you must clean stormwater conveyances of deposits of abrasive blasting debris and paint chips.

8.Q.3.1.3 ***Material Storage Areas.*** Store and plainly label all containerized materials (e.g., fuels, paints, solvents, waste oil, antifreeze, batteries) in a protected, secure location away from drains. Minimize the contamination of precipitation or stormwater from the storage areas. Specify which materials are stored indoors, and contain or enclose or use other measures for those stored outdoors. If abrasive blasting is performed, discuss the storage and disposal of spent abrasive materials generated at the facility. Implement an inventory control plan to limit the presence of potentially hazardous materials onsite.

8.Q.3.1.4 ***Engine Maintenance and Repair Areas.*** Minimize the contamination of precipitation or stormwater from all areas used for engine maintenance and repair through implementation of control measures such as the following, where determined to be feasible (list not exclusive): performing all maintenance activities indoors; maintaining an organized inventory of materials used in the shop; draining all parts of fluid prior to disposal; prohibiting the practice of hosing down the shop floor; using dry cleanup methods; and treating and/or recycling stormwater collected from the maintenance area.

8.Q.3.1.5 ***Material Handling Area.*** Minimize the contamination of precipitation or stormwater from material handling operations and areas (e.g., fueling, paint and solvent mixing, disposal of process wastewater streams from vessels) through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering fueling areas; using spill and overflow protection; mixing paints and solvents in a designated area (preferably indoors or under a shed); and minimizing discharges of stormwater to material handling areas.

8.Q.3.1.6 ***Drydock Activities.*** Routinely maintain and clean the drydock to minimize discharges of pollutants in stormwater. Address the cleaning of accessible areas of the drydock prior to flooding, and final cleanup following removal of the vessel and raising the dock. Include procedures for cleaning up oil, grease, and fuel spills occurring on the drydock. To minimize discharges of pollutants in stormwater from drydock activities, implement control measures such as the following, where determined to be feasible (list not exclusive): sweeping rather than hosing off debris and spent blasting material from accessible areas of the drydock prior to flooding; and making absorbent materials and oil containment booms readily available to clean up or contain any spills.

8.Q.3.2 ***Employee Training.*** (See also Part 2.1.2.8) As part of your employee training program, address, at a minimum, the following activities (as applicable): used oil management; spent solvent management; disposal of spent abrasives; disposal of vessel wastewaters; spill prevention and control; fueling procedures; general good housekeeping practices; painting and blasting procedures; and used battery management.

8.Q.3.3 ***Preventive Maintenance***. (See also Part 2.1.2.3) As part of your preventive maintenance program, perform timely inspection and maintenance of stormwater management devices (e.g., cleaning oil and water separators and sediment traps to ensure that spent abrasives, paint chips, and solids will be intercepted and retained prior to entering the storm drainage system), as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters.

8.Q.4 **Additional SWPPP Requirements**

8.Q.4.1 ***Drainage Area Site Map***. (See also Part 6.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or stormwater: fueling; engine maintenance and repair; vessel maintenance and repair; pressure washing; painting; sanding; blasting; welding; metal fabrication; loading and unloading areas; locations used for the treatment, storage, or disposal of wastes; liquid storage tanks; liquid storage areas (e.g., paint, solvents, resins); and material storage areas (e.g., blasting media, aluminum, steel, scrap iron).

8.Q.4.2 ***Summary of Potential Pollutant Sources.*** (See also Part 6.2.3) Document in the SWPPP the following additional sources and activities that have potential pollutants associated with them: outdoor manufacturing or processing activities (e.g., welding, metal fabricating) and significant dust or particulate generating processes (e.g., abrasive blasting, sanding, and painting).

8.Q.5 Additional Inspection Requirements (See also Part 3.1)

Include the following in all quarterly routine facility inspections: pressure washing areas; blasting, sanding, and painting areas; material storage areas; engine maintenance and repair areas; material handling areas; drydock area; and general yard area.

8.Q.6 Indicator Monitoring (See also Part 4.2.1)

Table 8.Q-1 identifies indicator monitoring that applies to the specific subsectors of Sector Q. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.Q-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector Q (Subsector Q1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector Q1. Water Transportation Facilities (SIC Code 4491 only)	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.Q.7 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.Q-2 identifies benchmarks that apply to Sector Q. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.Q-2.

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector Q1. Water Transportation Facilities (SIC 4412-4499)	Total Recoverable Aluminum	1,100 µg/L
	Total Recoverable Lead (freshwater)[2] Total Recoverable Lead (saltwater)[1]	Hardness Dependent 210 µg/L
	Total Recoverable Zinc	Hardness

Table 8.Q-2.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
	(freshwater)[2] Total Recoverable Zinc (saltwater)[1]	Dependent 90 µg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.
[2]The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 4.2.2.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	**Lead** (µg/L)	**Zinc** (µg/L)
0-24.99 mg/L	14	37
25-49.99 mg/L	24	52
50-74.99 mg/L	45	80
75-99.99 mg/L	69	107
100-124.99 mg/L	95	132
125-149.99 mg/L	123	157
150-174.99 mg/L	152	181
175-199.99 mg/L	182	204
200-224.99 mg/L	213	227
225-249.99 mg/L	246	249
250+ mg/L	262	260

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart R – Sector R – Ship and Boat Building and Repair Yards

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.R.1 Covered Stormwater Discharges

The requirements in Subpart R apply to stormwater discharges associated with industrial activity from Ship and Boat Building and Repair Yards as identified by the SIC Codes specified under Sector R in Table D-1 of Appendix D of the permit.

8.R.2 Limitations on Coverage

8.R.2.1 Prohibition of Non-Stormwater Discharges. (See also Part 1.1.3) The following are not authorized by this permit: discharges from vessels including bilge and ballast water, sanitary wastes, pressure wash water, and cooling water. (EPA includes these prohibited non- stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2.)

8.R.3 Additional Technology-Based Effluent Limits

8.R.3.1 Good Housekeeping Measures. (See also Part 2.1.2.2)

8.R.3.1.1 ***Pressure Washing Area***. If pressure washing is used to remove marine growth from vessels, the discharged water must be permitted as a process wastewater by a separate NPDES permit.

8.R.3.1.2 ***Blasting and Painting Area.*** Minimize the potential for spent abrasives, paint chips, and overspray to be discharged into receiving waters or the storm sewer system. Contain all blasting and painting activities, or use other measures, to prevent the discharge of the contaminants (e.g., hanging plastic barriers or tarpaulins during blasting or painting operations to contain debris). When necessary, regularly clean stormwater conveyances of deposits of abrasive blasting debris and paint chips.

8.R.3.1.3 ***Material Storage Areas.*** Store and plainly label all containerized materials (e.g., fuels, paints, solvents, waste oil, antifreeze, batteries) in a protected, secure location away from drains. Minimize the contamination of precipitation or stormwater from the storage areas. If abrasive blasting is performed, discuss the storage and disposal of spent abrasive materials generated at the facility. Implement an inventory control plan to limit the presence of potentially hazardous materials onsite.

8.R.3.1.4 ***Engine Maintenance and Repair Areas.*** Minimize the contamination of precipitation or stormwater from all areas used for engine maintenance and repair through implementation of control measures such as the following, where determined to be feasible (list not exclusive): performing all maintenance activities indoors; maintaining an organized inventory of materials used in the shop; draining all parts of fluid prior to disposal; prohibiting the practice of hosing down the shop floor; using dry cleanup

methods; and treating and/or recycling stormwater collected from the maintenance area.

8.R.3.1.5 ***Material Handling Area***. Minimize the discharge of pollutants in stormwater from material handling operations and areas (e.g., fueling, paint and solvent mixing, disposal of process wastewater streams from vessels) through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering fueling areas, using spill and overflow protection, mixing paints and solvents in a designated area (preferably indoors or under a shed), and minimizing stormwater run-on to material handling areas.

8.R.3.1.6 ***Drydock Activities.*** Routinely maintain and clean the drydock to minimize pollutants in stormwater. Clean accessible areas of the drydock prior to flooding and final cleanup following removal of the vessel and raising the dock. Include procedures for cleaning up oil, grease, or fuel spills occurring on the drydock. To minimize discharges of pollutants in stormwater from drydock activities, implement control measures such as the following, where determined to be feasible (list not exclusive): sweeping rather than hosing off debris and spent blasting material from accessible areas of the drydock prior to flooding; and having absorbent materials and oil containment booms readily available to clean up and contain any spills.

8.R.3.2 ***Employee Training.*** (See also Part 2.1.2.8) As part of your employee training program, address, at a minimum, the following activities (as applicable): used oil management, spent solvent management, disposal of spent abrasives, disposal of vessel wastewaters, spill prevention and control, fueling procedures, general good housekeeping practices, painting and blasting procedures, and used battery management.

8.R.3.3 ***Preventive Maintenance.*** (See also Part 2.1.2.3) As part of your preventive maintenance program, perform timely inspection and maintenance of stormwater management devices (e.g., cleaning oil and water separators and sediment traps to ensure that spent abrasives, paint chips, and solids will be intercepted and retained prior to entering the storm drainage system), as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters.

8.R.4 **Additional SWPPP Requirements**

8.R.4.1 ***Drainage Area Site Map***. (See also Part 6.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or stormwater: fueling; engine maintenance or repair; vessel maintenance or repair; pressure washing; painting; sanding; blasting; welding; metal fabrication; loading and unloading areas; treatment, storage, and waste disposal areas; liquid storage tanks; liquid storage areas (e.g., paint, solvents, resins); and material storage areas (e.g., blasting media, aluminum, steel, scrap iron).

8.R.4.2 ***Potential Pollutant Sources.*** (See also Part 6.2.3) Document in your SWPPP the following additional sources and activities that have potential pollutants associated with them (if applicable): outdoor manufacturing or processing activities (e.g., welding, metal fabricating) and significant dust or particulate generating processes (e.g., abrasive blasting, sanding, and painting).

8.R.4.3 ***Documentation of Good Housekeeping Measures.*** Document in your SWPPP any good housekeeping measures implemented to meet the effluent limits in Part 8.R.3.

8.R.4.3.1 ***Blasting and Painting Areas.*** Document in the SWPPP any standard operating practices relating to blasting and painting (e.g., prohibiting uncontained blasting and painting over open water or prohibiting blasting and painting during windy conditions, which can render containment ineffective).

8.R.4.3.2 ***Storage Areas.*** Specify in your SWPPP which materials are stored indoors, and contain or enclose or use other measures for those stored outdoors.

8.R.5 Additional Inspection Requirements (See also Part 3.1)

Include the following in all quarterly routine facility inspections: pressure washing areas; blasting, sanding, and painting areas; material storage areas; engine maintenance and repair areas; material handling areas; drydock area; and general yard area.

8.R.6 Indicator Monitoring (See also Part 4.2.1)

Table 8.R-1 identifies indicator monitoring that applies to the specific subsectors of Sector R. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.R-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector R (Subsector R1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector R1. Ship and Boat Building or Repairing Yards (SIC Code 3731, 3732)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values
	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart S – Sector S – Air Transportation

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.S.1 Covered Stormwater Discharges

The requirements in Subpart S apply to stormwater discharges associated with industrial activity from Air Transportation facilities identified by the SIC Codes specified under Sector S in Table D-1 of Appendix D of the permit.

8.S.2 Limitation on Coverage

8.S.2.1 ***Limitations on Coverage.*** This permit authorizes stormwater discharges from only those portions of the air transportation facility that are involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling and lubrication), equipment cleaning operations or deicing operations.

Note: the term "deicing" in this permit will generally be used to mean both deicing (removing frost, snow or ice) and anti-icing (preventing accumulation of frost, snow or ice) activities, unless specific mention is made otherwise.

8.S.2.2 ***Prohibition of Non-Stormwater Discharges***. (See also Part 1.1.3 and Part 8.S.5.3) This permit does not authorize the discharge of aircraft, ground vehicle, runway and equipment wash waters; nor the dry weather discharge of deicing chemicals. Such discharges must be covered by separate NPDES permit(s). Note that a discharge resulting from snowmelt is not a dry weather discharge. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2.)

8.S.3 Multiple Operators at Air Transportation Facilities

Air transportation facilities often have more than one operator who could discharge stormwater associated with industrial activity. Operators include the airport authority and airport tenants, including air passenger or cargo companies, fixed based operators, and other parties who routinely perform industrial activities on airport property.

8.S.3.1 ***Permit Coverage/Submittal of NOIs***. Where an airport transportation facility has multiple industrial operators that discharge stormwater, each individual operator must obtain coverage under an NPDES stormwater permit. To obtain coverage under the MSGP, all such operators must meet the eligibility requirements in Part 1 and must submit an NOI, per Part 1.3.2. (or, if appropriate, a no exposure certification per Part 1.5).

8.S.3.2 ***MSGP Implementation Responsibilities for Airport Authority and Tenants***. The airport authority, in collaboration with its tenants, may choose to implement certain MSGP requirements on behalf of its tenants in order to increase efficiency and eliminate redundancy or duplication of effort. Options available to the airport authority and its tenants for implementation of MSGP requirements include:

- The airport authority performs certain activities on behalf of itself and its tenants and reports on its activities;
- Tenants provide the airport authority with relevant inputs about tenants' activities, including deicing chemical usage*, and the airport authority compiles and reports on tenants' and its own activities;
- Tenants independently perform, document and submit required information on their activities.

*Tenants who report their deicing chemical usage to the airport authority and rely on the airport authority to perform monitoring should not check the glycol and urea use box on their NOI forms.

8.S.3.3 ***SWPPP Requirements***. A single comprehensive SWPPP must be developed for all stormwater discharges associated with industrial activity at the airport before submittal of any NOIs. The comprehensive SWPPP should be developed collaboratively by the airport authority and tenants. If any operator develops a SWPPP for discharges from its own areas of the airport, that SWPPP must be coordinated and integrated with the comprehensive SWPPP. All operators and their separate SWPPP contributions and compliance responsibilities must be clearly identified in the comprehensive SWPPP, which all operators must sign and certify per Part 6.2.7. As applicable, the SWPPP must clearly specify the MSGP requirements to be complied with by:

- The airport authority for itself;
- The airport authority on behalf of its tenants;
- Tenants for themselves.

For each activity that an operator (e.g., the airport authority) conducts on behalf of another operator (e.g., a tenant), the SWPPP must describe a process for reporting results to the latter operator and for ensuring appropriate follow-up, if necessary, by all affected operators. This is to ensure all actions are taken to correct any potential deficiencies or permit violations. For example, where the airport authority is conducting monitoring for itself and its tenants, the SWPPP must identify how the airport authority will share the monitoring results with its tenants, and then follow-up with its tenants where there are any exceedances of benchmarks, effluent limits, or water quality standards. In turn, the SWPPP must describe how the tenants will also follow-up to ensure permit compliance.

8.S.3.4 ***Duty to Comply.*** All individual operators are responsible for implementing their assigned portion of the comprehensive SWPPP, and operators must ensure that their individual activities do not render another operator's stormwater controls ineffective. In addition, the standard permit conditions found in Appendix B apply to each individual operator, including B.1 Duty to Comply (which states, in part, "You [each individual operator] must comply with all conditions of this permit."). For multiple operators at an airport this means that each individual operator remains responsible for ensuring all requirements of its own MSGP coverage are met regardless of whether the comprehensive SWPPP allocates the actual implementation of any of those responsibilities to another entity. That is, the failure of the entity allocated responsibility in the SWPPP to implement an MSGP requirement on behalf of other operators does not negate the other operators' ultimate liability.

8.S.4 Additional Technology-Based Effluent Limits

8.S.4.1 *Good Housekeeping Measures.* (See also Part 2.1.2.2)

8.S.4.1.1 ***Aircraft, Ground Vehicle and Equipment Maintenance Areas***. Minimize the contamination of stormwater from all areas used for aircraft, ground vehicle and equipment maintenance (including the maintenance conducted on the terminal apron and in dedicated hangers) through implementation of control measures such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): performing maintenance activities indoors; maintaining an organized inventory of material used in the maintenance areas; draining all parts of fluids prior to disposal; prohibiting the practice of hosing down the apron or hanger floor; using dry cleanup methods; and collecting the stormwater from the maintenance area and providing treatment or recycling.

8.S.4.1.2 ***Aircraft, Ground Vehicle and Equipment Cleaning Areas.*** Clearly demarcate these areas on the ground using signage or other appropriate means. Minimize the contamination of stormwater from cleaning areas.

8.S.4.1.3 ***Aircraft, Ground Vehicle and Equipment Storage Areas.*** Store all aircraft, ground vehicles and equipment awaiting maintenance in designated areas only and implement control measures to minimize the discharge of pollutants in stormwater from these storage areas such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): storing aircraft and ground vehicles indoors; using drip pans for the collection of fluid leaks; and perimeter drains, dikes or berms surrounding the storage areas.

8.S.4.1.4 ***Material Storage Areas.*** Maintain the vessels of stored materials (e.g., used oils, hydraulic fluids, spent solvents, and waste aircraft fuel) in good condition to prevent or minimize contamination of stormwater. Also plainly label the vessels (e.g., "used oil," "Contaminated Jet A"). To minimize contamination of precipitation/stormwater from these areas, implement control measures such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): storing materials indoors; storing waste materials in a centralized location; and installing berms/dikes around storage areas.

8.S.4.1.5 ***Airport Fuel System and Fueling Areas.*** Minimize the discharge of pollutants in stormwater from airport fuel system and fueling areas through implementation of control measures such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): implementing spill and overflow practices (e.g., placing absorptive materials beneath aircraft during fueling operations); using only dry cleanup methods; and collecting stormwater. If you have implemented a SPCC plan developed in accordance with the 2006 amendments to the SPCC rule, you may cite the relevant aspects from your SPCC plan that comply with the requirements of this section in your SWPPP.

8.S.4.1.6 ***Source Reduction.*** Consistent with safety considerations, minimize the use of urea and glycol-based deicing chemicals to reduce the aggregate amount of deicing chemicals used that could add pollutants to stormwater discharges.

- ***Runway Deicing Operations.*** To minimize the discharge of pollutants in stormwater from runway deicing operations, implement source reduction control measures such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): metered application of chemicals; pre-wetting dry chemical constituents prior to application; installing a runway ice detection system; implementing anti-icing operations as a preventive measure against ice buildup; heating sand; and product substitution. Chemical options to replace pavement deicers (urea or glycol) include (list not exclusive): potassium acetate; magnesium acetate; calcium acetate; and anhydrous sodium acetate.
- ***Aircraft Deicing Operations.*** Minimize the discharge of pollutants in stormwater from aircraft deicing operations. Determine whether excessive application of deicing chemicals occurs and adjust as necessary, consistent with considerations of flight safety. Determine whether alternatives to glycol and whether containment measures for applied chemicals are feasible. Implement control measures for reducing deicing fluid such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): forced-air deicing systems, computer-controlled fixed-gantry systems, infrared technology, hot water, varying glycol content to air temperature, enclosed-basket deicing trucks, mechanical methods, solar radiation, hangar storage, aircraft covers, and thermal blankets for MD-80s and DC-9s. Consider using ice- detection systems and airport traffic flow strategies and departure slot allocation systems where feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations. The evaluations and determinations required by this Part should be carried out by the personnel most familiar with the particular aircraft and flight operations and related systems in question (versus an outside entity such as the airport authority).

8.S.4.1.7 ***Management of Stormwater***. (See also Part 2.1.2.6) Minimize the discharge of pollutants in stormwater from deicing chemicals in stormwater. To minimize discharges of pollutants in stormwater from aircraft deicing, implement stormwater control measures such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): installing a centralized deicing pad to recover deicing fluid following application; plug- and-pump (PnP); using vacuum/collection trucks (glycol recovery vehicles); storing contaminated stormwater/deicing fluids in tanks; recycling collected deicing fluid where feasible; releasing controlled amounts to a publicly owned treatment works; separation of contaminated snow; conveying contaminated stormwater into an impoundment for biochemical decomposition (be aware of attracting wildlife that may prove hazardous to flight operations); and directing stormwater into vegetative swales or other

infiltration measures. To minimize discharges of pollutants in stormwater from runway deicing, implement stormwater control measures such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): mechanical systems (snow plows, brushes); conveying contaminated stormwater into swales and/or an impoundment; and pollution prevention practices such as ice detection systems, and airfield prewetting.

When applying deicing fluids during non-precipitation events (also referred to as "clear ice deicing"), implement control measures to prevent unauthorized discharge of pollutants (dry-weather discharges of pollutants would need coverage under an NPDES wastewater permit), or to minimize the discharge of pollutants from deicing fluids in later stormwater discharges, implement control measures such as the following, where determined to be feasible and that accommodate considerations safety, space, operational constraints, and flight considerations (list not exclusive): recovering deicing fluids; preventing the fluids from entering storm sewers or other stormwater discharge conveyances (e.g., covering storm sewer inlets, using booms, installing absorptive interceptors in the drains); releasing controlled amounts to a publicly owned treatment works Used deicing fluid should be recycled whenever practicable.

8.S.4.1.8 ***Deicing Season***. You must determine the seasonal timeframe (e.g., December- February, October - March) during which deicing activities typically occur at the facility. Implementation of control measures, including any BMPs, facility inspections and monitoring must be conducted with particular emphasis throughout the defined deicing season. If you meet the deicing chemical usage thresholds of 100,000 gallons glycol and/or 100 tons of urea, the deicing season you identified is the timeframe during which you must obtain the four required benchmark monitoring event results for deicing-related parameters, i.e., BOD, COD, ammonia and pH. See also Part8.S.8.

8.S.5 **Additional SWPPP Requirements**

8.S.5.1 ***Drainage Area Site Map.*** (See also Part 6.2.2) Document in the SWPPP the following areas of the facility and indicate whether activities occurring there may be exposed to precipitation/stormwater: aircraft and runway deicing operations; fueling stations; aircraft, ground vehicle and equipment maintenance/cleaning areas; and storage areas for aircraft, ground vehicles and equipment awaiting maintenance.

8.S.5.2 ***Potential Pollutant Sources.*** (See also Part 6.2.3) In the inventory of exposed materials, describe in the SWPPP the potential for the following activities and facility areas to contribute pollutants to stormwater discharges: aircraft, runway, ground vehicle and equipment maintenance and cleaning; and aircraft and runway deicing operations (including apron and centralized aircraft deicing stations, runways, taxiways and ramps). If deicing chemicals are used, a record of the types (including the Safety Data Sheets [SDS]) used and the monthly quantities, either as measured or, in the absence of metering, using best estimates, must be maintained. This includes all deicing chemicals, not just glycols and urea (e.g., potassium acetate), because large quantities of these other chemicals can still have an adverse impact on

receiving waters. Deicing operators must provide the above information to the airport authority for inclusion with any comprehensive airport SWPPPs.

8.S.5.3 ***Vehicle and Equipment Wash Water Requirements***. If wash water is handled in a manner that does not involve separate NPDES permitting or local pretreatment requirements (e.g., hauled offsite, retained onsite), describe the disposal method and include all pertinent information (e.g., frequency, volume, destination) in your SWPPP. Discharges of vehicle and equipment wash water are not authorized by this permit for this sector.

8.S.5.4 ***Documentation of Control Measures Used for Management of Stormwater***. Document in your SWPPP the control measures used for collecting or containing contaminated melt water from collection areas used for disposal of contaminated snow.

8.S.6 Additional Inspection Requirements

At a minimum, you must conduct facility inspections at least monthly during the deicing season (e.g., October through April for most mid-latitude airports). If your facility needs to deice before or after this period, expand the monthly inspections to include all months during which deicing chemicals may be used. The Director may specifically require you to increase inspection frequencies.

8.S.7 Indicator Monitoring (See also Part 4.2.1)

Table 8.S-1 identifies indicator monitoring that applies to the specific subsectors of Sector S. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.S-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector S (Subsector S1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector S1. Air Transportation Facilities (SIC Code 4512-4581)	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.S.8 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.S-2 identifies benchmarks that apply to Sector S. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.S-2.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
For airports where a single permittee, or a combination of permitted facilities use more than 100,000 gallons of pure glycol in glycol- based deicing fluids and/or 100 tons or more of urea on an average annual basis, monitor the first four parameters in ONLY those discharge points that collect stormwater from areas where deicing activities occur (SIC 4512-4581).	Biochemical Oxygen Demand (BOD_5)[1]	30 mg/L
	Chemical Oxygen Demand (COD)[1]	120 mg/L
	Ammonia[1]	2.14 mg/L
	pH[1]	6.0 - 9.0 s.u.

[1] These are deicing-related parameters. Collect the four benchmark samples, and any required follow-up benchmark samples, during the timeframe defined in Part 8.S.4.1.8 when deicing activities are occurring.

8.S.9 Effluent Limitations Based on Effluent Limitations Guidelines and New Source Performance Standards (See also Part 4.2.3.1)

8.S.9.1 ***Airfield Pavement Deicing***. For both existing and new "primary airports" (as defined at 40 CFR 449.2) with 1,000 or more annual non-propeller aircraft departures that discharge stormwater from airfield pavement deicing activities, there shall be no discharge of airfield pavement deicers containing urea. To comply with this limitation, such airports must do one of the following: (1) certify annually on the annual report that you do not use pavement deicers containing urea, or (2) meet the effluent limitation in Table 8.S-3.

8.S.9.2 ***Aircraft Deicing***. Airports that are both "primary airports" (as defined at 40 CFR 449.2) and new sources ("new airports") with 1,000 or more annual non-propeller aircraft departures must meet the applicable requirements for aircraft deicing at 40 CFR 449.11(a). Discharges of the collected aircraft deicing fluid directly to waters of the U.S. are not eligible for coverage under this permit.

8.S.9.3 ***Monitoring, Reporting and Recordkeeping***. For new and existing airports subject to the effluent limitations in Part 8.S.9.1 or 8.S.9.2 of this permit, you must comply with the applicable monitoring, reporting and recordkeeping requirements outlined in 40 CFR 449.20.

Table 8.S-3		
Industrial Activity	**Parameter**	**Effluent Limitation**
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	Ammonia as Nitrogen	14.7 mg/L, daily maximum

Part 8 – Sector-Specific Requirements for Industrial Activity
Subpart T – Sector T – Treatment Works

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.T.1 Covered Stormwater Discharges

The requirements in Subpart T apply to stormwater discharges associated with industrial activity from Treatment Works as identified by the Activity Code specified under Sector T in Table D-1 of Appendix D of the permit.

8.T.2 Industrial Activities Covered by Sector T

The requirements listed under this part apply to all existing point source stormwater discharges associated with the following activities:

8.T.2.1 Treatment works treating domestic sewage, or any other sewage sludge or wastewater treatment device or system used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge; that are located within the confines of a facility with a design flow of 1.0 million gallons per day (MGD) or more; or are required to have an approved pretreatment program under 40 CFR Part 403.

8.T.2.2 The following are not required to have permit coverage: farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located within the facility, or areas that are in compliance with Section 405 of the CWA.

8.T.3 Limitations on Coverage

8.T.3.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.3) Sanitary and industrial wastewater and equipment and vehicle wash water are not authorized by this permit. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2.)

8.T.4 Additional Technology-Based Effluent Limits

8.T.4.1 ***Control Measures.*** (See also Part 2.1.2) To minimize the discharge of pollutants in stormwater, implement control measures such as the following, where determined to be feasible (list not exclusive): routing stormwater to the treatment works; or covering exposed materials (i.e., from the following areas: grit, screenings and other solids handling, storage or disposal areas; sludge drying beds; dried sludge piles; compost piles; and septage or hauled waste receiving station).

8.T.4.2 ***Employee Training.*** (See also Part 2.1.2.8) At a minimum, training must address the following areas when applicable to a facility: petroleum product management; process chemical management; spill prevention and controls; fueling procedures; general good housekeeping practices; and proper procedures for using fertilizer, herbicides, and pesticides.

8.T.5 Additional SWPPP Requirements

8.T.5.1 ***Site Map.*** (See also Part 6.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or stormwater: grit, screenings, and other solids handling, storage, or disposal areas; sludge drying beds; dried sludge piles; compost piles; septage or hauled waste receiving station; and storage areas for process chemicals, petroleum products, solvents, fertilizers, herbicides, and pesticides.

8.T.5.2 ***Potential Pollutant Sources.*** (See also Part 6.2.3) Document in your SWPPP the following additional sources and activities that have potential pollutants associated with them, as applicable: grit, screenings, and other solids handling, storage, or disposal areas; sludge drying beds; dried sludge piles; compost piles; septage or hauled waste receiving station; and access roads and rail lines.

8.T.5.3 ***Wastewater and Wash Water Requirements.*** If wastewater and/or vehicle and equipment wash water is not covered by another NPDES permit but is handled in another manner (e.g., hauled offsite, retained onsite), the disposal method must be described and all pertinent information (e.g., frequency, volume, destination) must be included in your SWPPP. Discharges of vehicle and equipment wash water, including tank cleaning operations, are not authorized by this permit for this sector.

8.T.6 Additional Inspection Requirements (See also Part 3.1)

Include the following areas in all inspections: access roads and rail lines; grit, screenings, and other solids handling, storage, or disposal areas; sludge drying beds; dried sludge piles; compost piles; and septage or hauled waste receiving station.

8.T.7 Indicator Monitoring (See also Part 4.2.1)

Table 8.T-1 identifies indicator monitoring that applies to the specific subsectors of Sector T. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.T-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector T (Subsector T1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector T1. Treatment Works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

Table 8.T-1		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Indicator Monitoring Parameter**	**Indicator Monitoring Threshold**
an approved pretreatment program under 40 CFR Part 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the CWA (Activity Code TW)		

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart U – Sector U – Food and Kindred Products

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.U.1 Covered Stormwater Discharges

The requirements in Subpart U apply to stormwater discharges associated with industrial activity from Food and Kindred Products facilities as identified by the SIC Codes specified in Table D-1 of Appendix D of the permit.

8.U.2 Limitations on Coverage

8.U.2.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.3) The following discharges are not authorized by this permit: discharges containing boiler blowdown, cooling tower overflow and blowdown, ammonia refrigeration purging, and vehicle washing and clean-out operations. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2.)

8.U.3 Additional Technology-Based Limitations

8.U.3.1 ***Employee Training***. (See also Part 2.1.2.8) Address pest control in your employee training program.

8.U.4 Additional SWPPP Requirements

8.U.4.1 ***Drainage Area Site Map.*** (See also Part 6.2.2) Document in your SWPPP the locations of the following activities if they are exposed to precipitation or stormwater: vents and stacks from cooking, drying, and similar operations; dry product vacuum transfer lines; animal holding pens; spoiled product; and broken product container storage areas.

8.U.4.2 ***Potential Pollutant Sources***. (See also Part 6.2.3) Document in your SWPPP, in addition to food and kindred products processing-related industrial activities, application and storage of pest control chemicals (e.g., rodenticides, insecticides, fungicides) used on plant grounds.

8.U.5 Additional Inspection Requirements (See also Part 3.1)

Inspect on a quarterly basis, at a minimum, the following areas where the potential for exposure to stormwater exists: loading and unloading areas for all significant materials; storage areas, including associated containment areas; waste management units; vents and stacks emanating from industrial activities; spoiled product and broken product container holding areas; animal holding pens; staging areas; and air pollution control equipment.

8.U.6 Indicator Monitoring (See also Part 4.2.1)

Table 8.U-1 identifies indicator monitoring that applies to the specific subsectors of Sector U. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.U-1		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Indicator Monitoring Parameter**	**Indicator Monitoring Threshold**
Applies to all Sector U (Subsectors U1, U2, and U3) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector U3. Meat Products (SIC Code 2011-2015); Dairy Products (SIC Code 2021-2026); Canned, Frozen, and Preserved Fruits, Vegetables, and Food Specialties (SIC Code 2032-2038); Bakery Products (SIC Code 2051-2053); Sugar and Confectionery Products (SIC Code 2061-2068); Beverages (SIC Code 2082-2087); Miscellaneous Food Preparations and Kindred Products (SIC Code 2091-2099); Tobacco Products (SIC Code 2111-2141)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.U.7 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.U-2 identifies benchmarks that apply to the specific subsectors of Sector U. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.U-2.		
Subsector (You may be subject to requirements for more than one Sector / Subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector U1. Grain Mill Products (SIC 2041-2048)	Total Suspended Solids (TSS)	100 mg/L
Subsector U2. Fats and Oils Products (SIC 2074-2079)	Biochemical Oxygen Demand (BOD_5)	30 mg/L
	Chemical Oxygen Demand (COD)	120 mg/L
	Nitrate plus Nitrite Nitrogen	0.68 mg/L
	Total Suspended Solids (TSS)	100 mg/L

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart V – Sector V – Textile Mills, Apparel, and Other Fabric Products

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.V.1 Covered Stormwater Discharges

The requirements in Subpart V apply to stormwater discharges associated with industrial activity from Textile Mills, Apparel, and Other Fabric Product manufacturing as identified by the SIC Codes specified under Sector V in Table D-1 of Appendix D of the permit.

8.V.2 Limitations on Coverage

8.V.2.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.3) The following discharges are not authorized by this permit: discharges of wastewater (e.g., wastewater resulting from wet processing or from any processes relating to the production process), reused or recycled water, and waters used in cooling towers. If you have these types of discharges from your facility, you must cover them under a separate NPDES permit. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2.)

8.V.3 Additional Technology-Based Limitations

8.V.3.1 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2)

8.V.3.1.1 **Material Storage Areas.** Plainly label and store all containerized materials (e.g., fuels, petroleum products, solvents, and dyes) in a protected area, away from drains. Minimize contamination of the stormwater from such storage areas. Also consider an inventory control plan to prevent excessive purchasing of potentially hazardous substances. For storing empty chemical drums or containers, ensure that the drums and containers are clean (consider triple-rinsing) and that there is no contact of residuals with precipitation or stormwater. Collect and dispose of wash water from these cleanings properly.

8.V.3.1.2 ***Material Handling Areas***. Minimize contamination of stormwater from material handling operations and areas through implementation of control measures such as the following, where determined to be feasible: using spill and overflow protection; covering fueling areas; and covering or enclosing areas where the transfer of material may occur. When applicable, address the replacement or repair of leaking connections, valves, transfer lines and pipes that may carry chemicals, dyes or wastewater.

8.V.3.1.3 ***Fueling Areas.*** Minimize contamination of stormwater from fueling areas through implementation of control measures such as the following, where determined to be feasible: covering the fueling area; using spill and overflow protection; minimizing run-on of stormwater to the fueling areas; using dry cleanup methods; and treating and/or recycling stormwater collected from the fueling area.

8.V.3.1.4 ***Above-Ground Storage Tank Area.*** Minimize contamination of stormwater from above-ground storage tank areas, including the associated piping and valves, through implementation of control measures such as the following, where determined to be feasible (list not exclusive): regular cleanup of these areas; including measures for tanks, piping and valves explicitly in your SPCC program; minimizing discharges of stormwater from adjacent areas; restricting access to the area; inserting filters in adjacent catch basins; providing absorbent booms in unbermed fueling areas; using dry cleanup methods; and permanently sealing drains within critical areas that may discharge to a storm drain.

8.V.3.1.5 ***Employee Training***. (See also Part 2.1.2.8) As part of your employee training program, address, at a minimum, the following activities (as applicable): use of reused and recycled waters, solvents management, proper disposal of dyes, proper disposal of petroleum products and spent lubricants, spill prevention and control, fueling procedures, and general good housekeeping practices.

8.V.4 Additional SWPPP Requirements

8.V.4.1 ***Potential Pollutant Sources.*** (See also Part 6.2.3) Document in your SWPPP the following additional sources and activities that have potential pollutants associated with them: industry-specific significant materials and industrial activities (e.g., backwinding, beaming, bleaching, backing bonding, carbonizing, carding, cut and sew operations, desizing, drawing, dyeing locking, fulling, knitting, mercerizing, opening, packing, plying, scouring, slashing, spinning, synthetic-felt processing, textile waste processing, tufting, turning, weaving, web forming, winging, yarn spinning, and yarn texturing).

8.V.4.2 ***Description of Good Housekeeping Measures for Material Storage Areas***. Document in the SWPPP your containment area or enclosure for materials stored outdoors in connection with Part 8.V.3.1.1 above.

8.V.5 Additional Inspection Requirements

Inspect, at least monthly, the following activities and areas (at a minimum): transfer and transmission lines, spill prevention, good housekeeping practices, management of process waste products, and all structural and nonstructural management practices.

8.V.6 Indicator Monitoring (See also Part 4.2.1)

Table 8.V-1 identifies indicator monitoring that applies to the specific subsectors of Sector V. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.V-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector V (Subsector V1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

Table 8.V-1		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Indicator Monitoring Parameter**	**Indicator Monitoring Threshold**
Subsector V1. Textile Mill Products (SIC Code 2211-2299); Apparel and Other Finished Products Made from Fabrics and Similar Materials (SIC Code 2311-2399); Leather and Leather Products (note: see Sector Z1 for Leather Tanning and Finishing) (SIC Code 3131-3199)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart W – Sector W – Furniture and Fixtures

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.W.1 Covered Stormwater Discharges

The requirements in Subpart W apply to stormwater discharges associated with industrial activity from Furniture and Fixtures facilities as identified by the SIC Codes specified under Sector W in Table D-1 of Appendix D of the permit.

8.W.2 Additional SWPPP Requirements

8.W.2.1 ***Drainage Area Site Map.*** (See also Part 6.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or stormwater: material storage (including tanks or other vessels used for liquid or waste storage) areas; outdoor material processing areas; areas where wastes are treated, stored, or disposed of; access roads; and rail spurs.

8.W.3 Indicator Monitoring (See also Part 4.2.1)

Table 8.W-1 identifies indicator monitoring that applies to the specific subsectors of Sector W. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.W-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector W (Subsector W1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector W1. Wood Kitchen Cabinets (SIC Code 2434); Furniture and Fixtures (SIC Code 2511-2599)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart X – Sector X – Printing and Publishing

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.X.1 Covered Stormwater Discharges

The requirements in Subpart X apply to stormwater discharges associated with industrial activity from Printing and Publishing facilities as identified by the SIC Codes specified under Sector X in Table D-1 of Appendix D of the permit.

8.X.2 Additional Technology-Based Effluent Limits

8.X.2.1 *Good Housekeeping Measures.* (See also Part 2.1.2.2)

8.X.2.1.1 ***Material Storage Areas.*** Plainly label and store all containerized materials (e.g., skids, pallets, solvents, bulk inks, hazardous waste, empty drums, portable and mobile containers of plant debris, wood crates, steel racks, and fuel oil) in a protected area, away from drains. Minimize contamination of the stormwater from such storage areas. Also consider an inventory control plan to prevent excessive purchasing of potentially hazardoussubstances.

8.X.2.1.2 ***Material Handling Area.*** Minimize contamination of stormwater from material handling operations and areas (e.g., blanket wash, mixing solvents, loading and unloading materials) through implementation of control measures such as the following, where determined to be feasible (list not exclusive): using spill and overflow protection; covering fueling areas; and covering or enclosing areas where the transfer of materials may occur. When applicable, address the replacement or repair of leaking connections, valves, transfer lines, and pipes that may carry chemicals orwastewater.

8.X.2.1.3 ***Fueling Areas***. Minimize contamination of stormwater from fueling areas through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering the fueling area; using spill and overflow protection; minimizing discharges of stormwater to the fueling areas; using dry cleanup methods; and treating and/or recycling stormwater collected from the fueling area.

8.X.2.1.4 ***Above Ground Storage Tank Area.*** Minimize contamination of the stormwater from above-ground storage tank areas, including the associated piping and valves, through implementation of control measures such as the following, where determined to be feasible (list not exclusive): regularly cleaning these areas; explicitly addressing tanks; piping and valves in the SPCC program; minimizing stormwater discharges from adjacent areas; restricting access to the area; inserting filters in adjacent catch basins; providing absorbent booms in unbermed fueling areas; using dry cleanup methods; and permanently sealing drains within critical areas that may discharge to a storm drain.

8.X.2.2 ***Employee Training.*** (See also Part 2.1.2.8) As part of your employee training program, address, at a minimum, the following activities (as applicable): spent solvent management, spill prevention and control, used oil management, fueling procedures, and general good housekeeping practices.

8.X.3 Additional SWPPP Requirements

8.X.3.1 Description of Good Housekeeping Measures for Material Storage Areas. In connection with Part 8.X.2.1.1, describe in the SWPPP the containment area or enclosure for materials stored outdoors.

8.X.4 Indicator Monitoring (See also Part 4.2.1)

Table 8.X-1 identifies indicator monitoring that applies to the specific subsectors of Sector X. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.X-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector X (Subsector X1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector X1. Printing, Publishing, and Allied Industries (SIC Code 2711-2796)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart Y – Sector Y – Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.Y.1 Covered Stormwater Discharges

The requirements in Subpart Y apply to stormwater discharges associated with industrial activity from Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries facilities as identified by the SIC Codes specified under Sector Y in Table D-1 of Appendix D of the permit.

8.Y.2 Additional Technology-Based Effluent Limits

8.Y.2.1 ***Controls for Rubber Manufacturers.*** (See also Part 2.1.2) Minimize the discharge of zinc in your stormwater discharges. Parts 8.Y.2.1.1 to 8.Y.2.1.5 give possible sources of zinc to be reviewed and list control measures to be implemented where determined to be feasible. Implement additional control measures such as the following, where determined to be feasible (list not exclusive): using chemicals purchased in pre-weighed, sealed polyethylene bags; storing in-use materials in sealable containers, ensuring an airspace between the container and the cover to minimize "puffing" losses when the container is opened; and using automatic dispensing and weighing equipment.

8.Y.2.1.1 ***Zinc Bags***. Ensure proper handling and storage of zinc bags at your facility through implementation of control measures such as the following, where determined to be feasible (list not exclusive): employee training on the handling and storage of zinc bags; indoor storage of zinc bags; cleanup of zinc spills without washing the zinc into the storm drain; and the use of 2,500- pound sacks of zinc rather than 50- to 100-pound sacks.

8.Y.2.1.2 ***Dumpsters.*** Minimize discharges of zinc from dumpsters through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering the dumpster; moving the dumpster indoors; and providing a lining for the dumpster.

8.Y.2.1.3 ***Dust Collectors and Baghouses.*** Minimize contributions of zinc to stormwater from dust collectors and baghouses. Replace or repair, as appropriate, improperly operating dust collectors and baghouses.

8.Y.2.1.4 ***Grinding Operations.*** Minimize contamination of stormwater as a result of dust generation from rubber grinding operations. Where determined to be feasible, install a dust collection system.

8.Y.2.1.5 ***Zinc Stearate Coating Operations.*** Minimize the potential for stormwater contamination from drips and spills of zinc stearate slurry that may be released to the storm drain. Where determined to be feasible, use alternative compounds to zinc stearate.

8.Y.2.2 Controls for Plastic Products Manufacturers. Minimize the discharge of plastic resin pellets in your stormwater discharges through implementation of control measures

such as the following, where determined to be feasible (list not exclusive): minimizing spills; cleaning up of spills promptly and thoroughly; sweeping thoroughly; pellet capturing; employee education; and disposal precautions.

8.Y.3 Additional SWPPP Requirements

8.Y.3.1 Potential Pollutant Sources for Rubber Manufacturers. (See also Part 6.2.3) Document in your SWPPP the use of zinc at your facility and the possible pathways through which zinc may be discharged in stormwater.

8.Y.4 Indicator Monitoring (See also Part 4.2.1)

Table 8.Y-1 identifies indicator monitoring that applies to the specific subsectors of Sector Y. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.Y-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector Y (Subsectors Y1 and Y2) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector Y2. Miscellaneous Plastics Products (SIC Code 3081-3089); Musical Instruments (SIC Code 3931); Dolls, Toys, Games, and Sporting and Athletic Goods (SIC Code 3942-3949); Pens, Pencils, and Other Artists' Materials (SIC Code 3951-3955 (except 3952 – see Sector C)); Costume Jewelry, Costume Novelties, Buttons, and Miscellaneous Notions, Except Precious Metal (SIC Code 3961, 3965); Miscellaneous Manufacturing Industries (SIC Code 3991-3999)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.Y.5 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.Y-2 identifies benchmarks that apply to Sector Y. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.Y-2.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector Y1. Rubber Products Manufacturing (SIC 3011, 3021, 3052, 3053, 3061, 3069)	Total Recoverable Zinc (freshwater)[2] Total Recoverable Zinc (saltwater)[1]	Hardness Dependent 90 µg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.
[2]The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 4.2.2.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	**Zinc** (µg/L)
0-24.99 mg/L	37
25-49.99 mg/L	52
50-74.99 mg/L	80
75-99.99 mg/L	107
100-124.99 mg/L	132
125-149.99 mg/L	157
150-174.99 mg/L	181
175-199.99 mg/L	204
200-224.99 mg/L	227
225-249.99 mg/L	249
250+ mg/L	260

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart Z – Sector Z – Leather Tanning and Finishing

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.Z.1 Covered Stormwater Discharges

The requirements in Subpart Z apply to stormwater discharges associated with industrial activity from Leather Tanning and Finishing facilities as identified by the SIC Code specified under Sector Z in Table D-1 of Appendix D of the permit.

8.Z.2 Additional Technology-Based Effluent Limits

8.Z.2.1 *Good Housekeeping Measures.* (See also Part 2.1.2.2)

8.Z.2.1.1 ***Storage Areas for Raw, Semiprocessed, or Finished Tannery By-products.*** Minimize contamination of stormwater from pallets and bales of raw, semiprocessed, or finished tannery by-products (e.g., splits, trimmings, shavings). Store or protect indoors with polyethylene wrapping, tarpaulins, roofed storage, etc. where practicable. Place materials on an impermeable surface and enclose or put berms (or equivalent measures) around the area to prevent stormwater run-on and discharges where practicable.

8.Z.2.1.2 ***Material Storage Areas.*** Label storage containers of all materials (e.g., specific chemicals, hazardous materials, spent solvents, waste materials) and minimize contact of such materials with stormwater.

8.Z.2.1.3 ***Buffing and Shaving Areas.*** Minimize contamination of stormwater with leather dust from buffing and shaving areas through implementation of control measures such as the following, where determined to be feasible (list not exclusive): implementing dust collection enclosures; implementing preventive inspection and maintenance programs; or other appropriate preventive measures.

8.Z.2.1.4 ***Receiving, Unloading, and Storage Areas.*** Minimize contamination of stormwater from receiving, unloading, and storage areas. If these areas are exposed, implement control measures such as the following, where determined to be feasible (list not exclusive): covering all hides and chemical supplies; diverting drainage to the process sewer; or grade berming or curbing the area to prevent stormwater discharges.

8.Z.2.1.5 ***Outdoor Storage of Contaminated Equipment.*** Minimize contact of stormwater with contaminated equipment through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering equipment, diverting drainage to the process sewer, and cleaning thoroughly prior to storage.

8.Z.2.1.6 ***Waste Management.*** Minimize contamination of stormwater from waste storage areas through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering dumpsters; moving waste management activities indoors; covering waste

piles with temporary covering material such as tarpaulins or polyethylene; and minimizing stormwater discharges by enclosing the area or building berms around the area.

8.Z.3 Additional SWPPP Requirements

8.Z.3.1 ***Drainage Area Site Map.*** (See also Part 6.2.2) Identify in your SWPPP where any of the following may be exposed to precipitation or stormwater: processing and storage areas of the beamhouse, tanyard, and re-tan wet finishing and dry finishing operations.

8.Z.3.2 ***Potential Pollutant Sources.*** (See also Part 6.2.3) Document in your SWPPP the following sources and activities that have potential pollutants associated with them (as appropriate): temporary or permanent storage of fresh and brine-cured hides; extraneous hide substances and hair; leather dust, scraps, trimmings, and shavings.

8.Z.4 Indicator Monitoring (See also Part 4.2.1)

Table 8.Z-1 identifies indicator monitoring that applies to the specific subsectors of Sector Z. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.Z-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector Z (Subsector Z1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector Z1. Leather Tanning and Finishing (SIC Code 3111)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart AA – Sector AA – Fabricated Metal Products

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.AA.1 Covered Stormwater Discharges

The requirements in Subpart AA apply to stormwater discharges associated with industrial activity from Fabricated Metal Products facilities as identified by the SIC Codes specified under Sector AA in Table D-1 of Appendix D of the permit.

8.AA.2 Additional Technology-Based Effluent Limits

8.AA.2.1 Good Housekeeping Measures. (See also Part 2.1.2.2)

8.AA.2.1.1 ***Raw Steel Handling Storage.*** Minimize the generation of and/or recover and properly manage scrap metals, fines, and iron dust. Include measures for containing materials within storage handling areas.

8.AA.2.1.2 Paints and Painting Equipment. Minimize exposure of paint and painting equipment to stormwater.

8.AA.2.2 Spill Prevention and Response Procedures. (See also Part 2.1.2.4) Ensure that the necessary equipment to implement a cleanup is available to personnel. The following areas should be addressed:

8.AA.2.2.1 Metal Fabricating Areas. Maintain clean, dry, orderly conditions in these areas. Use dry clean-up techniques where practicable.

8.AA.2.2.2 Storage Areas for Raw Metal. Keep these areas free of conditions that could cause, or impede appropriate and timely response to, spills or leakage of materials through implementation of control measures such as the following, where determined to be feasible (list not exclusive): maintaining storage areas so that there is easy access in the event of a spill, and labeling stored materials to aid in identifying spill contents.

8.AA.2.2.3 Metal Working Fluid Storage Areas. Minimize the potential for stormwater contamination from storage areas for metal working fluids.

8.AA.2.2.4 Cleaners and Rinse Water. Control and clean up spills of solvents and other liquid cleaners, control sand buildup and disbursement from sand-blasting operations, and prevent exposure of recyclable wastes. Substitute environmentally benign cleaners when possible.

8.AA.2.2.5 Lubricating Oil and Hydraulic Fluid Operations. Minimize the potential for stormwater contamination from lubricating oil and hydraulic fluid operations. Use monitoring equipment or other devices to detect and control leaks and overflows where feasible. Install perimeter controls such as dikes, curbs, grass filter strips, or equivalent measures where feasible.

8.AA.2.2.6 Chemical Storage Areas. Minimize stormwater contamination and accidental spillage in chemical storage areas. Include a program to inspect containers and identify proper disposal methods.

8.AA.2.3 Spills and Leaks. (See also Part 6.2.3.3) In your spill prevention and response procedures, required by Part 2.1.2.4, pay attention to the following materials (at a minimum): chromium, toluene, pickle liquor, sulfuric acid, zinc and other water priority chemicals, and hazardous chemicals and wastes.

8.AA.3 Additional SWPPP Requirements

8.AA.3.1 Drainage Area Site Map. (See also Part 6.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or stormwater: raw metal storage areas; finished metal storage areas; scrap disposal collection sites; equipment storage areas; retention and detention basins; temporary and permanent diversion dikes or berms; right-of-way or perimeter diversion devices; sediment traps and barriers; processing areas, including outside painting areas; wood preparation; recycling; and raw material storage.

8.AA.3.2 Potential Pollutant Sources. (See also Part 6.2.3) Document in your SWPPP the following additional sources and activities that have potential pollutants associated with them: loading and unloading operations for paints, chemicals, and raw materials; outdoor storage activities for raw materials, paints, empty containers, corn cobs, chemicals, and scrap metals; outdoor manufacturing or processing activities such as grinding, cutting, degreasing, buffing, and brazing; onsite waste disposal practices for spent solvents, sludge, pickling baths, shavings, ingot pieces, and refuse and waste piles.

8.AA.4 Additional Inspection Requirements

8.AA.4.1 Inspections. (See also Part 3.1) At a minimum, include the following areas in all inspections: raw metal storage areas, finished product storage areas, material and chemical storage areas, spent solvents and chemical storage areas, recycling areas, loading and unloading areas, equipment storage areas, paint areas, drainage from roof and vehicle fueling and maintenance areas. Potential pollutants include chromium, zinc, lubricating oil, solvents, aluminum, oil and grease, methyl ethyl ketone, steel, and related materials.

8.AA.5 Indicator Monitoring (See also Part 4.2.1)

Table 8.AA-1 identifies indicator monitoring that applies to the specific subsectors of Sector AA. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.AA-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector AA (Subsectors AA1 and AA2) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

8.AA.6 Sector-Specific Benchmarks (See also Part 4.2.2)

Table 8.AA-2 identifies benchmarks that apply to the specific subsectors of Sector AA. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.AA-2

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector AA1. Fabricated Metal Products, except Coating (SIC 3411-3499; 3911-3915)	Total Recoverable Aluminum	1,100 µg/L
	Total Recoverable Zinc (freshwater)[2] Total Recoverable Zinc (saltwater)[1]	Hardness Dependent 90 µg/L
	Nitrate plus Nitrite Nitrogen	0.68 mg/L
Subsector AA2. Fabricated Metal Coating and Engraving (SIC 3479)	Total Recoverable Zinc (freshwater)[2] Total Recoverable Zinc (saltwater)[1]	Hardness Dependent 90 µg/L
	Nitrate plus Nitrite Nitrogen	0.68 mg/L

[1] Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.
[2] The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 4.2.2.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	Zinc (µg/L)
0-24.99 mg/L	37
25-49.99 mg/L	52
50-74.99 mg/L	80
75-99.99 mg/L	107
100-124.99 mg/L	132
125-149.99 mg/L	157
150-174.99 mg/L	181
175-199.99 mg/L	204
200-224.99 mg/L	227
225-249.99 mg/L	249
250+ mg/L	260

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart AB – Sector AB – Transportation Equipment, Industrial or Commercial Machinery Facilities

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.AB.1 Stormwater Discharges

The requirements in Subpart AB apply to stormwater discharges associated with industrial activity from Transportation Equipment, Industrial or Commercial Machinery facilities as identified by the SIC Codes specified under Sector AB in Table D-1 of Appendix D of the permit.

8.AB.2 Additional SWPPP Requirements

8.AB.2.1 ***Drainage Area Site Map.*** (See also Part 6.2.2) Identify in your SWPPP where any of the following may be exposed to precipitation or stormwater: vents and stacks from metal processing and similar operations.

8.AB.3 Indicator Monitoring (See also Part 4.2.1)

Table 8.AB-1 identifies indicator monitoring that applies to the specific subsectors of Sector AB. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.AB-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector AB (Subsector AB1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector AB1. Industrial and Commercial Machinery, Except Computer and Office Equipment (see Sector AC) (SIC Code 3511-3599 (except 3571-3579)); Transportation Equipment Except Ship and Boat Building and Repairing (see Sector R) (SIC Code 3711-3799 (except 3731, 3732))	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart AC – Sector AC – Electronic and Electrical Equipment and Components, Photographic and Optical Goods

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.AC.1 Covered Stormwater Discharges

The requirements in Subpart AC apply to stormwater discharges associated with industrial activity from facilities that manufacture Electronic and Electrical Equipment and Components, Photographic and Optical goods as identified by the SIC Codes specified in Table D-1 of Appendix D of the permit.

8.AC.2 Additional Requirements

No additional sector-specific requirements apply.

8.AC.3 Indicator Monitoring (See also Part 4.2.1)

Table 8.AC-1 identifies indicator monitoring that applies to the specific subsectors of Sector AC. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.AC-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector AC (Subsector AC1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector AC1. Computer and Office Equipment (SIC Code 3571-3579); Measuring, Analyzing, and Controlling Instruments; Photographic and Optical Goods, Watches, and Clocks (SIC Code 3812-3873); Electronic and Electrical Equipment and Components, Except Computer Equipment (SIC Code 3612-3699)	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart AD – Sector AD – Stormwater Discharges Designated by the Director as Requiring Permits

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector- specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.AD.1 Covered Stormwater Discharges

Sector AD is used to provide permit coverage for facilities designated by the Director as needing a stormwater permit, and any discharges of stormwater associated with industrial activity that do not meet the description of an industrial activity covered by Sectors A-AC.

8.AD.1.1 Eligibility for Permit Coverage. Because this sector is primarily intended for use by discharges designated by the Director as needing a stormwater permit (which is an atypical circumstance), and your facility may or may not normally be discharging stormwater associated with industrial activity, you must obtain the Director's written permission to use this permit prior to submitting an NOI. If you are authorized to use this permit, you will still be required to ensure that your discharges meet the basic eligibility provisions of this permit at Part 1.1.

8.AD.2 Sector-Specific Benchmarks and Effluent Limits. (See also Part 4)

The Director will establish any additional monitoring and reporting requirements for your facility prior to authorizing you to be covered by this permit. Additional monitoring requirements would be based on the nature of activities at your facility and your stormwater discharges.

8.AD.3 Indicator Monitoring (See also Part 4.2.1)

Table 8.AD-1 identifies indicator monitoring that applies to the specific subsectors of Sector AD. This indicator monitoring applies to both your primary industrial activity and any co-located industrial activities.

Table 8.AD-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Indicator Monitoring Parameter	Indicator Monitoring Threshold
Applies to all Sector AD (Subsectors AD1) facilities with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit	Polycyclic Aromatic Hydrocarbons (PAHs)*	Report Only/ No thresholds or baseline values
Subsector AD1. Other stormwater discharges designated by the Director as needing a permit (see 40 CFR 122.26(a)(9)(i)(C) & (D)) or any facility discharging stormwater associated with industrial activity not described by any of Sectors A-AC. NOTE: Facilities may not elect to be covered under Sector AD. Only the Director may assign a facility to Sector AD.	Chemical Oxygen Demand (COD)	Report Only/ No thresholds or baseline values
	Total Suspended Solids (TSS)	Report Only/ No thresholds or baseline values
	pH	Report Only/ No thresholds or baseline values

* Monitoring is required for the 16 individual PAHs identified at Appendix A to 40 CFR Part 423: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, indeno[1,2,3-c,d]pyrene, and dibenz[a,h]anthracene.

9.1.2.4 *Submission of Monitoring Data.*

The results of any monitoring required by this permit that identify violations of any effluent limits or benchmarks for any parameter for which monitoring is required shall be sent to the appropriate Regional Office of MassDEP (attention: Bureau of Air and Waste). In addition, any follow-up monitoring and a description of the corrective actions required and undertaken to meet the effluent limits or benchmarks shall be sent to the appropriate MassDEP Regional Office. See *id.*

9.1.2.5 *Sector-Specific Requirements.*

The Massachusetts Coastal Zone Management Program submitted the following conditions to be included in the WQC for the 2015 permit in order to meet the Program's Consistency Review, and to remain consistent, these same requirements are included in this WQC:

a. In Sector Q [Water Transportation] add copper to the required monitoring parameters with a benchmark monitoring concentration as is included in the MSGP 2020 Table 1 of Appendix J.

b. In Sector R [Ship and Boat Building and Repair Yards] add aluminum, lead, and copper to the list of required monitoring parameters with a benchmark monitoring concentration as included in the MSGP 2020 Table 1 of Appendix J.

c. Modify the monitoring requirements for Sectors Q and R such that all four of the quarterly monitoring samples must meet the benchmarks rather than the average of the four before no further monitoring is required. See *id.* at 2.

9.1.3 MAR05I000: Indian country within the Commonwealth of Massachusetts

No additional requirements.

9.1.4 NHR050000: State of New Hampshire

Operators in New Hampshire must also meet the following conditions (see certification provided by the State of New Hampshire, CWA410Cert_NH_2021 MSGP):

9.1.4.1 *Consider Opportunities for on-site infiltration of stormwater.*

In Part 2.1.1 Control Measure Selection and Design Considerations, you are required to consider opportunities for infiltrating runoff onsite. This is encouraged, but it should only be done if consistent with the statutes and rules of the Department of Environmental Services written to protect groundwater. Infiltration best management practices are not recommended at industrial sites except in areas where industrial activities do not occur, such as at office buildings and their associated parking facilities, or in drainage areas at the facility where a certification of no exposure will always be possible [see 40CFR122.26(g)]. Other justifiable reasons for not using on-site infiltration BMP include the following:

a. The facility is located in a wellhead protection area as defined in RSA 485-C:2; or

b. The facility is located in an area where groundwater has been reclassified to GAA, GA1 or GA2 pursuant to RSA 485-C and Env-Dw 901; and

c. Any areas that would be exempt from the groundwater recharge requirements contained in Env-Wq 402, Groundwater Discharge Permit and Registration Rules (formerly Env-Ws1500), including all land uses or activities considered to be a "High-load site." See *id.at 1-5*

9.1.4.2 *Maintenance of Infiltration Best Management Practices.*

In Part 2.1.2.3 you are required to maintain control measures. In Parts 6.2.2, 6.2.5.1 and 6.5 you are required to document the location of control measures, perform

inspections and maintenance, and keep records. Accordingly, the SWPPP must contain the following:

a. A description of and the location of each on-site infiltration BMP installed;

b. The maintenance procedures that will be followed to ensure proper operation, including the removal of sediment from pretreatment devices;

c. The inspection procedures that will be followed at least annually. These should include the procedures for ensuring that the stormwater being infiltrated is not exposed to industrial pollutants and the procedures for ensuring proper drainage to prevent mosquito breeding;

d. The employee name (or title of the position) who is a member of the stormwater pollution prevention team (see Part 6.2.1) who will be responsible for the maintenance required in Part 9.1.4.2.b, the inspection required in Part 9.1.4.c and any necessary corrective actions or additional implementation measures required in Part 5; and

e. Records for all maintenance performed, inspections conducted, and corrective actions taken. See *id.*

9.1.4.3 *Discontinue, Permit or Register On-site Infiltration BMP if Necessary.*

If at any time a certification of no exposure can no longer be made for any of the stormwater to be infiltrated, then the infiltration BMP must cease for that portion of the runoff or the discharge must be permitted or registered as appropriate. The following may be required:

a. Infiltration BMP that meet the definition of a Class V well or that infiltrates stormwater via a subsurface structure (i.e. concrete chambers, dry well, leach field, etcetera) will need an underground injection control (UIC) registration from NHDES; and

b. Permitting as a groundwater discharge as required in Env-Wq 402, if the stormwater will or may contain regulated contaminants.

The SWPPP must be modified immediately if new infiltration BMP are proposed or if existing infiltration BMP will cease. See *id.*

9.1.4.4 *Required NHDES notification.*

a. Notify the NHDES Groundwater Discharge Permit Coordinator immediately if you believe that any infiltration BMP may need to be permitted or registered (see Part 9.1.4.3) during the permit term.

b. Notify the NHDES Wastewater Engineering Bureau immediately of any plans to discharge any new non-stormwater discharges during the permit term. This does not include the allowable non-stormwater discharges listed in Part 1.1.3

c. Immediately notify the NHDES Drinking Water and Groundwater Bureau at (603) 271-2513 of reportable releases (e.g., spills) of extremely hazardous, hazardous substance or oil as defined in accordance with the Emergency Planning and Community Right-to-Know Act (EPCRA) that are discharged into a source of drinking water or within a source protection area. This is in addition to immediately contacting local and state emergency responders through calling 911 and (603) 271-3899 during business hours and the state police at 800 525-5555 after hours or on weekends. See *id.*

9.1.4.5 *Information That May Be Requested by NHDES.*

To ensure compliance with RSA 485-C, RSA 485-A, RSA 485-A:13, I(a), Env-Wq 400 and Env-Wq 401 the following information may be requested by NHDES. This information

must be kept on site unless you receive a written request from NHDES that it be sent to the address shown in Part 9.1.4.6.

a. The site map required in Part 6.2.2, showing the type and location of all on-site infiltration BMP utilized at the facility or the reason(s) why none were installed.

b. A list of all non-stormwater discharges that occur at the facility, including their source locations and the control measures being used (see Parts 1.2.2 and 6.2.3.4).

c. A copy of the Annual Reports required in Part 7.4. See *id.*

9.1.4.6 *Where to Submit Information.*

Information submitted to NHDES must be sent to the following address:

NH Department of Environmental Services
Wastewater Engineering Bureau
Permits & Compliance Section
P.O. Box 95
Concord, NH 03302-0095

9.1.4.7 *Modification of Clean Water Act Section 401 Water Quality Certification.*

When NHDES determines that additional water quality certification requirements are necessary to the protect water quality, it may require individual dischargers to meet additional conditions to obtain or continue coverage under the MSGP. Any such conditions shall be supplied to the permittee in writing. Any required pollutant loading analyses and any designs for structural best management practices necessary to protect water quality must be prepared by a professional engineer (civil or sanitary) licensed in New Hampshire. See *id.*

9.1.5 RIR05I000: Indian country within the State of Rhode Island

No additional requirements.

9.1.6 VTR05F000: Areas in the State of Vermont subject to industrial activity by a Federal Operator

No additional requirements.

9.2 EPA Region 2: New Jersey, New York, Puerto Rico, Virgin Islands

9.2.1 PRR050000: Commonwealth of Puerto Rico

No additional requirements.

9.2.2 NYR051000: Indian country within the State of New York, except the lands of the St. Regis Mohawk Tribe

No additional requirements.

9.3 EPA Region 3: Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia.

9.3.1 DCR050000: District of Columbia

Operators in the District of Columbia must also meet the following conditions (see certification provided by the District of Columbia, CWA410Cert_DC_2021 MSGP):

9.3.1.1 *Compliance with District of Columbia Laws and Regulations.*

Discharges covered by the MSGP must comply with the District of Columbia Water Pollution Control Act of 1984, as amended, D.C. Official Code § 8-103.01 et seq.; and its implementing regulations in Title 21 Chapters 11 and 19 of the District of Columbia Municipal Regulations. See *id.* at 1-3

9.3.1.2 *No Preclusion of Responsibilities.*

Nothing in this permit will be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to District of Columbia laws and regulations. See *id.*

9.3.1.3 *Additional Reporting.*

The permittee shall report to the Associate Director, Inspection and Enforcement Division any noncompliance which may endanger health or the environment. All information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. See *id.*

9.3.2 DER05F000: Areas in the State of Delaware subject to industrial activity by a Federal Operator

No additional requirements.

9.4 EPA Region 4: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee

9.4.1 ALR05I000: Indian country within the State of Alabama

No additional requirements.

9.4.2 FLRORI000: Indian country within the State of Florida

9.4.2.1 Miccosukee Tribe of Indians

Industrial stormwater discharges on the Miccosukee Tribe lands are not eligible for permit coverage under this permit. Contact the EPA Region 4 office for additional information, including available permits.

9.4.2.2 Seminole Tribe of Florida

Industrial stormwater discharges on the Seminole Tribe lands are not eligible for permit coverage under this permit. Contact the EPA Region 4 office for additional information, including available permits.

9.4.3 MSR05I000: Indian country within the State of Mississippi

No additional requirements.

9.4.4 NCR05I000: Indian country within the State of North Carolina

No additional requirements.

9.4.5 SCR05I000: Indian country within the State of South Carolina

No additional requirements.

9.5 EPA Region 5: Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin.

9.5.1 MIR05I000: Indian country within the State of Michigan

No additional requirements.

9.5.2 MNR05I000: Indian country within the State of Minnesota

9.5.2.1 *Fond du Lac Reservation*

Operators in the Fond du Lac Reservation must also meet the following conditions (see certification provided by the Fond du Lac Reservation, CWA410Cert_Fond du Lac_2021 MSGP):

9.5.2.1.1 *Submission of SWPPP.*

A copy of the Storm Water Pollution Prevention Plan (SWPPP) must be submitted to the Office of Water Protection at least fifteen (15) days in advance of sending the

Notice of Intent to EPA. The SWPPP can be submitted electronically to richardgitar@FDLREZ.com or by hardcopy sent to:

Fond du Lac Reservation
Office of Water Protection
1720 Big Lake Road
Cloquct, MN 55720

MSGP applicants are encouraged to work with the FDL Office of Water Protection in the identification of all proposed receiving waters and selection of appropriate Best Management Practices (BMPs). See *id.* at 2-4.

9.5.2.1.2 *Submission of NOI and NOT.*

Copies of the Notice of Intent (NOI) and the Notice of Termination (NOT) must be sent to the Fond du Lac Office of Water Protection at the same time they are submitted to EPA. See *id.*

9.5.2.1.3 *Benchmark Monitoring for Turbidity.*

The Benchmark Monitoring Concentration (BMC) for Turbidity shall NOT exceed 10% of natural background as determined by the Office of Water Protection staff as measured in NTU. See *id.*

9.5.2.1.4 *Effluent Limitations.*

The Effluent Limitations for ALL sectors shall NOT exceed more than two times (2x) Fond du Lac's ambient concentrations (based upon more than 20 years of monitoring data) for the following (See *id.*):

a)	Ammonia	Ambient =<0.3mg/l
b)	Arsenic	Ambien =< 3.0 µg/l
c)	Chromium	Ambient =< 0.8 µg/l
d)	Total Phosphorus	Ambient =< 0.09 mg/l
e)	Total Suspended Solids	Ambient =< 16 mg/l
f)	Zinc	Ambient =< 24 mg/l

9.5.2.1.5 *Water Quality Criteria.*

All industrial activities shall be carried out in such a manner as will prevent violations of water quality criteria as stated in the Water Quality Standards of the Fond du Lac Reservation, Ordinance 12/98, as amended. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of water of the Fond du Lac Reservation for any of the uses designated in the Water Quality Standards of the Fond du Lac Reservation. These uses include wildlife, aquatic life, warm water fisheries, cold water fisheries, subsistence fishing (netting), primary contact recreation, secondary contact recreation, cultural, wild rice areas, aesthetic waters, agriculture, navigation, and commercial. See *id.*

9.5.2.1.6 *Impacts to cultural sites.*

This certification does not authorize impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for such listing. See *id.*

9.5.2.2 ***Grand Portage Band of the Minnesota Chippewa Tribe***

The following conditions apply to industrial storm water discharges into Waters of the Grand Portage Reservation (see certification provided by the Grand Portage Reservation, CWA410Cert_Fond du Lac_2021 MSGP):

9.5.2.2.1 *Definitions.*

The definitions set forth in the Grand Portage Water Resources Ordinance, as amended, ("Water Resources Ordinance") govern these certification conditions. See id. at 1,4.

9.5.2.2.2 *Water Quality Standards.*

All industrial storm water discharges authorized by this permit must comply with the Grand Portage Water Quality Standards, Applicable Federal Standards, and the Water Resources Ordinance. See id.

9.5.2.2.3 *Additional Monitoring.*

Grand Portage reserves the right to require additional monitoring of storm water discharges as determined on a case-by-case basis. If the Board determines that additional monitoring is necessary, the monitoring plan must be supplemented and incorporated into the Storm Water Pollution Prevention Plan ("SWPPP") before the SWPPP is submitted to the USEPA. Accordingly, the Board must be contacted, at the address listed below, at the onset of writing the SWPPP. See id. at 1,4.

9.5.2.2.4 *Submission of SWPPP, NOI, and NOT.*

In addition, a copy of the SWPPP, Notice of Intent ("NOI"), and Notice of Termination (NOT) (collectively the "application") must be submitted to the Board at least 30 days before submitting the NOI to USEPA. Applications should be sent to the following address:

Grand Portage Environmental Resources Board
P.O. Box 428
Grand Portage, MN 55605

9.5.2.2.5 *Additional information.*

Upon receipt of the application, the Board shall order the Grand Portage Environmental Department (Department) to conduct a technical review of the application materials. If necessary, Department staff will send a request for additional information to the applicant within 30 days of receipt of the application. See *id.* at 1,5.

9.5.2.2.6 *Preliminary coverage determination.*

After considering the application and such other information and data as the Department staff deems relevant, the Department Director will evaluate whether there is a reasonable probability that the proposed activity will violate the Grand Portage Water Quality Standards or any Applicable Federal Standards and recommend one of the following preliminary determinations:

(a) Unconditionally grant coverage under the MSGP;

(b) Grant coverage under the MSGP subject to certain conditions; or

(c) Deny coverage under the MSGP.

9.5.2.2.7 *Final coverage determination.*

Within 30 days of the Department Director's recommendation, the Board will provide public notice of the application for coverage under the MSGP and the Department Director's recommendations. Upon request, the Department will

schedule a hearing as provided in 40 CFR Part 25. If, after considering the evidence provided at the hearing and the entire record, the Board determines by a preponderance of the evidence that the proposed activity will violate the Grand Portage Water Quality Standards or any Applicable Federal Standards, the Board shall deny eligibility for coverage under the MSGP, unless there is a reasonable certainty that compliance can be achieved by the applicant's adherence to reasonable conditions. If the Board finds insufficient evidence to show that the proposed activity will violate the Grand Portage Water Quality Standards or any Applicable Federal Standards, it shall approve coverage under the MSGP. See *id.*

9.5.2.2.8 *Appeals.*

Appeals related to water quality certification decisions or permits will be heard by the Grand Portage Tribal Court. See *id.*

9.5.2.2.9 *Prohibition of Discharge.*

The applicant is prohibited from discharging into the Waters of the Reservation pursuant to the MSGP unless the Board has granted coverage under the MSGP, or until the applicant has adhered to conditions required by the Board's conditional grant of coverage. See *id.*

9.5.2.2.10 *Compliance.*

The Board retains full authority provided by the Water Resources Ordinance to ensure compliance with and enforce the provisions of the Water Resource Ordinance, the Grand Portage Water Quality Standards, Applicable Federal Standards, and these certification conditions." See *id.*

9.5.3 WIR05I000: Indian country within the State of Wisconsin, except those on Bad River Band of Lake Superior Tribe of Chippewa Indians lands and on Sokaogon Chippewa Community lands

No additional requirements.

9.6 EPA Region 6: Arkansas, Louisiana, Oklahoma, Texas, and New Mexico (except see Region 9 for Navajo lands, and see Region 8 for Ute Mountain Reservation lands).

9.6.1 LAR05I000: Indian country within the State of Louisiana

No additional requirements.

9.6.2 NMR050000: The State of New Mexico, except Indian country

Operators in New Mexico must also meet the following conditions (see certification provided by the State of New Mexico, CWA410Cert_NM_2021 MSGP):

9.6.2.1 *PFAS Analytes Monitoring.*

Except as specified below, all NAICS codes listed in the December 4, 2019 Advanced Notice of Proposed Rulemaking for TRI Reporting[1] and covered under this MSGP shall monitor and report PFAS in effluent once during the first year of MSGP coverage, or when the facility discharges if no discharge occurs during the first year. Samples shall be analyzed by an accredited lab for all 18 PFAS analytes using EPA Method 537.1 (EPA 2018), and the DoD Quality Systems Manual Method 5.3 (2019) as guidance. Method and analysis shall be sufficiently sensitive to evaluate the New Mexico screening level for PFOA and PFOS.

The PFAS screening level in New Mexico is indicated below. The screening level is not a standard of quality and purity for the surface waters of New Mexico but

[1] https://www.federalregister.gov/documents/2019/12/04/2019-26034/addition-of-certain-per--and-polyfluoroalkyl-substances-community-right-to-know-toxic-chemical

allows detection and further evaluation of the existence of PFAS in stormwater discharges to determine if more attention is warranted.

PFAS Screening Level for New Mexico*	
PFOA + PFOS	0.070 µg/L

*Concentrations of PFOA and PFOS are summed before being compared to the screening level.

If PFOA and/or PFOS are detected above the New Mexico screening level, additional monitoring and reporting shall occur annually and in accordance with the same parameters and methods as required for the first sampling event. In addition, the permittee should take corrective action and identify ways to minimize, reduce, and eliminate PFAS from the industrial activity through product substitution and/or additional best management practices and operational controls. Results of past monitoring and any corrective actions taken should be included in the Stormwater Pollution Prevention Plan (SWPPP).

The permittee shall submit monitoring results for all 18 PFAS analytes under EPA Method 537.1, as required, to NMED at the following address:

Point Source Program Manager
Surface Water Quality Bureau
New Mexico Environment Department
P.O. Box 5469
Santa Fe, NM 87502-5469

NMED may suspend the requirement to monitor and report PFAS under the following circumstances:

- If the permittee determines it is not technically practicable to measure PFAS in their stormwater discharge; or
- If additional sampling determines that it is unlikely that PFAS exist in a permittee's stormwater discharge, if the permittee provides facility data that demonstrate PFAS are unlikely to be present in the stormwater discharge, or there are no available, accredited laboratories capable of performing the required PFAS analysis; or
- If additional sampling demonstrates that the pollutant concentration is lower than the screening level or the permittee is subject to duplicative or more stringent PFAS requirements.

However, to be exempted for these reasons, the permittee must submit documentation to NMED for approval. See *id.* At 4-6.

9.6.2.2 *Benchmark Monitoring Concentrations*

The benchmark values for pollutants must be modified to reflect New Mexico WQS for the facilities in New Mexico based on water quality criteria approved in the Standards for Interstate and Intrastate Surface Waters, 20.6.4.900 NMAC. Consistent with the language in this permit, exceedances of a benchmark value, even if that value is based on New Mexico WQS, are not immediately a violation of the permit unless the permittee does not take appropriate action to improve best management practices or otherwise mitigate the discharge of the detected pollutant. A full Tier 2 Antidegradation Review (significant degradation analysis; reasonable alternatives identification; economic and social importance; etc.) does not translate to projects covered under this general permit. Therefore, this condition is necessary to ensure that New Mexico's antidegradation policy is upheld and surface waters of the state are protected from degradation. See *id.*

The following tables lay out the benchmark values that should be used for sector-specific monitoring in the MSGP.

MSGP Benchmark Values and Sources		
Most restrictive value (highlighted below) must be chosen		
Pollutant	**2020 proposed MSGP Benchmark**	**New Mexico MSGP Benchmark**
Total Recoverable Beryllium	130 µg/L	
Biochemical Oxygen Demand (5-day)	30 mg/L	
pH	6.0 – 9.0 s.u.	6.6 – 9.0 s.u.
Chemical Oxygen Demand	120 mg/L	
Total Phosphorus	2.0 mg/L	
Total Suspended Solids (TSS)	100 mg/L	
Ammonia	2.14 mg/L	
Nitrate and Nitrite Nitrogen	0.68 mg/L	
Turbidity	50 NTU	
Total Recoverable Antimony	640 µg/L	640 µg/L (dissolved)
Total Recoverable Arsenic	150 µg/L	9 µg/L (dissolved)
Total Recoverable Cadmium	1.8 µg/L	See below
Chromium (III)	570 µg/L	See below
Chromium (VI)	16 µg/L	16 µg/L (dissolved)
Total Recoverable Copper	14 µg/L	See below
Total Recoverable Cyanide	22 µg/L	5.2 µg/L
Total Recoverable Lead	8.2 µg/L	14 µg/L (dissolved)
Total Recoverable Mercury	1.4 µg/L	0.77 µg/L
Total Recoverable Nickel	47 µg/L	See below
Total Recoverable Selenium	5 µg/L	5 µg/L
Total Recoverable Silver	3.8 µg/L	See below
Total Recoverable Zinc	120 µg/L	See below

	Hardness dependent criteria - Dissolved (µg/L)						
Concurrent Hardness as $CaCO_3$, dissolved (mg/L)	**Cd**	**Cr III**	**Cu**	**Pb**	**Ni**	**Ag**	**Zn**
25	0.51	180	4	14	140	0.3	45
30	0.59	210	4	17	170	0.4	54
40	0.76	270	6	24	220	0.7	70

50	0.91	320	7	30	260	1.0	85
60	1.07	370	8	37	300	1.3	101
70	1.22	430	10	44	350	1.7	116
80	1.37	470	11	51	390	2.2	131
90	1.51	520	12	58	430	2.7	145
100	1.65	570	13	65	470	3.2	160
200	2.98	1,010	26	140	840	11	301
220	3.23	1,087	28	151	912	13	328
300	4.21	1,400	38	210	1190	21	435
400 and above	5.38	1,770	50	280	1510	35	564

9.6.2.3 *Outstanding National Resource Waters.*

Operators are not eligible to obtain authorization under this permit for stormwater discharges to outstanding national resource waters (ONRWs, also referred to as "Tier 3" waters). Although State WQS provide for temporary and short-term degradation of water quality in an ONRW under very limited circumstances, if approved by the New Mexico Water Quality Control Commission as specified at 20.6.4.8.A NMAC, the approval process required for these activities does not translate to projects covered under this general permit. This condition is necessary to ensure that no degradation is allowed in ONRWs by requiring proposed stormwater discharges to be reviewed under the individual permit process. Tier 3 waters are defined in Appendix F of the proposed permit. See *id.*

9.6.2.4 *Additional SWPPP Requirements.*

Information on how the permittee knows the groundwater or spring water is uncontaminated must be documented in the facility SWPPP.

EPA must amend the NOI to include a question for the permittee to indicate whether they anticipate to discharge groundwater or spring water from their site. The permittee must be able to indicate on the NOI: flow rate, whether the ground or spring water source is nearby potential pollutant sources, and if the ground or spring water has been tested and is not contaminated by the potential pollutant source.

If discharge of groundwater or spring water is anticipated at a facility, permittees must complete the following steps to determine if it is potentially contaminated:

a. Indicate on the NOI that dewatering activities are anticipated. Provide information on flow and potential to encounter impacted ground or spring water.

b. Refer to the Mapper tool at https://gis.web.env.nm.gov/oem and check if the following groundwater pollutant sources are located nearby the anticipated source of groundwater or spring water such that there is a potential for contamination:

Project Location Relative to a Source of Potential Groundwater Contamination	**Constituents likely to be required for testing**
Within 0.5 mile of an open Leaking Tank site	BTEX (Benzene, Toluene, Ethylbenzene, and Xylene) plus additional parameters depending on site conditions.

Within 0.5 mile of an open Voluntary Remediation site	All parameters listed in 20.6.4.900 NMAC, hardness and pH (or an alternate list approved by the NMED SWQB)
Within 0.5 mile of an open RCRA Corrective Action Site	All parameters listed in 20.6.4.900 NMAC, hardness and pH (or an alternate list approved by the NMED SWQB)
Within 0.5 mile of an open Abatement Site	All parameters listed in 20.6.4.900 NMAC, hardness and pH (or an alternate list approved by the NMED SWQB)
Within 0.5 mile of an open Brownfield Site	All parameters listed in 20.6.4.900 NMAC, hardness and pH (or an alternate list approved by the NMED SWQB)
Within 1.0 mile of a Superfund site with associated groundwater contamination.	All parameters listed in 20.6.4.900 NMAC, hardness and pH (or an alternate list approved by the NMED SWQB)
EPA approved-sufficiently sensitive methods must be used – approved methods are listed in 40 C.F.R. 136.3.	

c. If within the distances listed above, Permittee must provide test data indicating the quality of the groundwater or spring water to be discharged according to the table above.

d. Permittee must send test result data to EPA Region 6 and the NMED Surface Water Quality Bureau. If the test data exceed State WQS, the ground or spring water cannot be discharged from the facility into surface waters under this permit. Discharge to surface waters must be conducted under a separate NPDES individual permit to ensure proper treatment and disposal. If disposal will be to the ground surface or in an unlined pond, the permittee must submit a Notice of Intent to Discharge (NOI) to the NMED Ground Water Quality Bureau. For further assistance determining whether your facility may encounter impacted groundwater, the permittee may contact the NMED Ground Water Quality Bureau at (505) 827-2965.

e. Investigative information and data demonstrating that water is not contaminated must be documented in the facility SWPPP. See *id.*

9.6.2.5 *Ponds and Other Impoundments.*

Per the New Mexico Office of the State Engineer requirements[2], impoundments must drain or infiltrate within 96 hours. The facility must transfer a valid water right to impound and retain the stormwater longer than 96 hours or request a variance from the State Engineer.

If the facility intends to discharge stormwater that contains a "water contaminant" as defined in 20.6.2.7 NMAC, a State of New Mexico Notice of Intent to Discharge must

[2] 19.26.2.15.B NMAC PONDS AND OTHER IMPOUNDMENTS: A permit is required to capture or store surface water in an impoundment. An application to capture and store surface water shall be filed pursuant to 19.26.2.10 NMAC or 19.26.2.11 NMAC unless the impoundment of water is authorized as a livestock watering impoundment under 19.26.2.14 NMAC.

B. Flood control: No permit to appropriate water is required for an impoundment when the primary purpose of the impoundment is flood control, provided the outlet drains the impoundment (from the spillway crest) in 96 hours. The water shall not be detained in the impoundment in excess of 96 hours unless the state engineer has issued a waiver to the owner of the impoundment.

be submitted to NMED in accordance with 20.6.2.1201 NMAC **prior to discharge**. This includes infiltration of stormwater or a discharge to the ground surface that may move directly or indirectly into groundwater.

In the event impounded stormwater contains a "water contaminant" as defined in 20.6.2.7 NMAC, the stormwater must meet benchmark values in order to be discharged to a surface water of the State. See *id.*

9.6.3 NMR05I000: Indian country within the State of New Mexico, except Ute Mountain Reservation lands that are covered under Colorado permit COR05I000 and Navajo Reservation lands that are covered under Arizona permit AZR05I000

9.6.3.1 Ohkay Owingeh

Permittees in the tribe of Ohkay Owingeh must also meet the following conditions (see certification provided by the Tribe of Ohkay Owingeh, CWA410Cert_Ohkay Owingeh_2021 MSGP)**:**

9.6.3.1.1 *Submission of NOI and NOT.*

The operator(s) must provide a copy of the Notice of Intent (NOI) to the Ohkay Owingeh Office of Environmental Affairs the same day electronic confirmation is received from the U.S. Environmental Protection Agency (EPA) that the submitted NOI was certified and is undergoing its 30-day review period . Additionally, a copy of the Notice of Termination (NOT) must be provided the same day electronic confirmation is received from the EPA that the NOT has been accepted. The NOI and NOT should be provided to the address below. See *id.* at 1-2.

9.6.3.1.2 *Where to Submit Information.*

Ron Lovato, Governor
P.O. Box 1099
Ohkay Owingeh, NM 87566

governor@ohkay .org

Naomi L. Archuleta
Environmental Programs Manager
Office of Environmental Affairs, NRD Division
P.O. Box 717
Ohkay Owingeh, NM 87566

naomi.archuleta@ohkay.org

9.6.3.1.3 *SWPPP Availability.*

The operator(s) must provide an electronic copy of the Storm Water Pollution Prevention Plan(s) to the Office of Environmental Affairs by email to naomi.archuleta@ohkay.org at least 30 days prior to submitting the NOI to EPA and Ohkay Owingeh. See *id.*

9.6.3.2 *Pueblo of Isleta*

Permittees in the Pueblo of Isleta must also meet the following conditions (see certification provided by the Pueblo of Isleta, CWA410Cert_Pueblo of Isleta_2021 MSGP)**:**

9.6.3.2.1 *Water Quality Standards.*

Impacts to waters of the Pueblo of Isleta are prohibited. All lakes, rivers, streams, ditches, springs and wetlands shall be fully protected. See *id.* at 1-2.

9.6.3.2.2 *Submission of NOI.*

All discharges made pursuant to the MSGP shall be conducted in conformance with the requirements of Permit No. NMR05000, and in such a manner as will prevent violations of the Pueblo's Surface Water Quality Standards. See *id.*

9.6.3.2.3 *Submission of NOI.*

The operator(s) must provide a copy of the Notice of Intent ("NOI") to the Governor and Water Quality Control Officer the same day electronic confirmation is received by the EPA that the submitted NOI was certified and is undergoing its 30-day review period. See *id.* Additionally, a copy of the Notice of Termination ("NOT") must be provided the same day electronic confirmation is received from the EPA that the NOT has been accepted. A paper copy of the NOI and NOT should be provided to the Governor; electronic copy or URL is acceptable for submittal to the Pueblo of Isleta Water Quality Control Officer:

Governor Pueblo of Isleta
PO Box 1270
Isleta NM 87022

Water Quality Control Officer Pueblo of Isleta
Environment Department PO Box 1270
Isleta NM 87022
Ramona.Montoya @isletapueblo.com

9.6.3.2.4 *SWPPP Availability.*

The operator(s) must provide an electronic copy of its Storm Water Pollution Prevention Plan(s) ("SWPP") to the Pueblo of Isleta Environment Department by email to Ramona.Montoya@isletapueblo.com at least 30 days p1ior to submitting the NOI to EPA and the Pueblo. The Pueblo may use the EPA 30-day waiting period to determine whether any additional measures are necessary to meet applicable Tribal surface water quality standards or to comply with Tribal antidegradation requirements. See *id.*

9.6.3.3 **Pueblo of Laguna**

The following condition applies only to discharges on the Santa Ana Indian Pueblo (see certification provided by the Pueblo of Isleta, CWA410Cert_Pueblo of Laguna_2021 MSGP):

9.6.3.3.1 *Submission of NOI.*

The operator(s) must provide a copy of the Notice of Intent (NOI) to the Pueblo of Laguna's Environmental & Natural Resources Department the same day electronic confirmation is received from the U.S. Environmental Protection Agency (EPA) that the submitted NOI was certified and is undergoing its 30-day review period. Additionally, a copy of the Notice of Termination (NOT) must be provided the same day electronic confirmation is received from the EPA that the NOT has been accepted. See *id.* 1-2.

The NOI and NOT should be provided to the following address:

Pueblo of Laguna, Office of the Governor
Attn: Environmental & Natural Resources Department
P.O. Box 194 Laguna, NM 87026
Email: setter@pol-nsn.gov, cc: gjojola@pol-nsn.gov, ewoodward@pol-nsn.gov

9.6.3.3.2 *SWPPP Availability.*

The operator(s) must provide an electronic copy of the Storm Water Pollution Prevention Plan(s) to Pueblo of Laguna Environmental Program at the same time the NOI is submitted to the listed email addresses above. See *id.*

9.6.3.3.3 *Additional Correspondence.*

The Pueblo of Laguna Environmental Program shall be included on any correspondences between the applicant and the EPA related to analytical data, written reports, corrective action, enforcement, monitoring, or incident reports. See *id.*

9.6.3.3.4 *Additional Consultation.*

Immediate initiation of consultation with the Pueblo of Laguna is required should any human remains or artifacts be unearthed that fall under the Native American Graves Protection and Repatriation Act guidelines during the span of the project. If human remains are unearthed, contact the Pueblo of Laguna Police Department at 505-552-6666. If artifacts are unearthed, contact the Pueblo of Laguna Tribal Historic Preservation Office at 505-552-5033. See *id.*

9.6.3.4 Pueblo of Santa Ana

The following condition applies only to discharges on the Santa Ana Indian Pueblo (see certification provided by the Pueblo of Isleta, CWA410Cert_Pueblo of Santa Ana_2021 MSGP):

9.6.3.4.1 *Submission of NOI.*

The permittee shall provide a copy of the Notice of Intent (NOI) to the Pueblo of Santa Ana (the Pueblo), at the same time it is submitted to the U.S. Environmental Protection Agency (EPA), for projects with discharges onto the lands of the Pueblo as defined in the Pueblo's antidegradation policy within the Pueblo of Santa Ana Water Quality Standards. See *id.* at 2-3.

9.6.3.4.2 *SWPPP Availability.*

The permittee shall provide a final copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Pueblo that is associated with any project identified in the NOI, at the same time that an NOI is submitted to the EPA. The SWPP should include any projects with discharges onto the lands of the Pueblo as defined in the antidegradation policy within the Pueblo of Santa Ana Water Quality Standards. See *id.*

9.6.3.4.3 *Additional Reporting.*

The permittee shall provide copies of inspections reports and of corrective action reports to the Pueblo at the address below for review, upon request. See *id.*

9.6.3.4.4 *Submission of NOT.*

Upon completion of the project identified in the NOI, the permittee will submit a Notice of Termination (NOT) to the Pueblo. See *id.*

9.6.3.4.5 *Where to Submit Information.*

All required or requested permittee specific information identified above shall be submitted to the following address:

Pueblo of Santa Ana Department of Natural
Resources, Attention: Water Resources Division
2 Dove Road
Santa Ana Pueblo, NM, 87004

9.6.3.4.6 *Additional Reporting to the Pueblo.*

Discharges are not authorized by the permittee unless an accurate and complete NOI and SWPPP have been submitted to the Pueblo. Failure to

provide an accurate and complete NOI and SWPPP may result in a denial of the discharge permit, or a delay in groundbreaking or construction. See *id.*

9.6.3.4.7 *Start Work Authorization.*

The permittee will not proceed with site work until authorized by the Pueblo. The Pueblo requires review of the complete and final SWPP before authorization to proceed. The Pueblo will provide and "Authorization to Process" notice after review and approval of the SWPPP. See *id.*

9.6.3.4.8 *Additional Monitoring.*

The permittee could be required to perform water quality monitoring, sampling or analysis during the active permit dates for constituents determined by the Pueblo. See *id.*

9.6.3.4.9 *Site Stabilization.*

Before submitting a NOT, permittees must certify to the Pueblo's Department of Natural Resources in writing that requirements for site stabilization have been met, and any temporary erosion control structures have been removed. Documentation of the Pueblo's review that such requirements have been reviewed and met will be provided for the permittee to add to the permittee's NOT submission to EPA. Copies of all NOT submitted to the EPA must also be sent to the Pueblo at the address provided above. See *id.*

9.6.3.4.10 *Additional Correspondence.*

Copies of all Notifications (Notice of Intent, Notice of Termination, or other communications), associated analytical data, and written reports for actions covered under this permit occurring on Pueblo of Santa Ana lands or within five river miles of the northern exterior boundary of Pueblo of Santa Ana lands shall be provided to the Pueblo of Santa Ana Department of Natural Resources at same time they are provided to the U.S. Environmental Protection Agency.

Any correspondence between the applicant and EPA related to corrective action, enforcement, monitoring, or adverse incident written reports should likewise be routed to the Pueblo of Santa Ana Department of Natural Resources. The Pueblo of Santa Ana reserves the right to request additional information or study and may delay or deny a permit for cause. All requested materials shall be sent to: Pueblo of Santa Ana Department of Natural Resources, 2 Dove Road, Santa Ana Pueblo, NM, 87004. See *id.*

9.6.3.5 <u>Pueblo of Santa Clara.</u>

The following condition applies only to discharges on the Santa Clara Indian Pueblo (see certification provided by the Pueblo of Isleta, CWA410Cert_Pueblo of Santa Clara_2021 MSGP):

9.6.3.5.1 *Submission of NOI, NOT and SWPPP.*

The operator(s) provide an electronic copy of Notice of Intent (NOI) to the Santa Clara Pueblo Office of Environmental Affairs within 7 business days after electronic confirmation is received from the U.S. Environmental Protection Agency (EPA) that the submitted NOI was certified and is undergoing its 30-day review period. An electronic copy of the Notice of Termination (NOT) shall be provided to the Santa Clara Pueblo Office of Environmental Affairs within 5 calendar days after electronic confirmation is received from the EPA that the NOT has been accepted. A copy of the Storm Water Pollution Prevention Plan

shall be made available to the Pueblo of Santa Clara staff upon request. *See id. 1-4.*

9.6.3.5.2 *Where to Submit Information.*

Electronic copies of all required or requested documents shall be emailed to the Santa Clara Pueblo Office of Environmental Affairs at dinoc@santaclarapueblo.org. If an electronic copy can't be provided, a hard copy may be mailed to:

Santa Clara Pueblo Governor's Office
P.O. Box 580
Espanola, NM 87532

9.6.4 OKR05I000: Indian country within the State of Oklahoma

9.6.4.1 Pawnee Nation

The following condition applies only to discharges in Pawnee Nation (see certification provided by the Pueblo of Isleta, CWA410Cert_Pawnee Nation of Oklahoma_2021 MSGP):

9.6.4.1.1 *Submission of NOI and NOT.*

The operator(s) must provide a copy of the Notice of Intent (NOI) to the Pawnee Nation the same day electronic confirmation is received from the U.S. Environmental Protection Agency (EPA) that the submitted NOI was certified and is undergoing its 30-day review period. Additionally, a copy of the Notice of Termination (NOT) must be provided the same day electronic confirmation is received from the EPA that the NOT has been accepted. Electronic copies of the NOI and NOT shall be submitted to the Pawnee Nation Department of Environmental Conservation and Safety by email to: dnrs@pawneenation.org. See *id.*

9.6.4.1.2 *SWPPP Availability.*

The operator(s) must provide an electronic copy of the Storm Water Pollution Prevention Plan(s) to the Pawnee Nation by email to Pawnee Nation Department of Environmental Conservation and Safety, dnrs@pawneenation .org at least 30 days prior to submitting the NOI to EPA and the Pawnee Nation. See *id.*

9.6.4.1.3 *Additional Reporting.*

The Pawnee Nation must be notified at 918.762.3655 immediately upon discovery of any non-compliance with any provision of the permit conditions. See *id.*

9.6.5 OKR05F000: Facilities in the State of Oklahoma not under the jurisdiction of the Oklahoma Department of Environmental Quality or the Oklahoma Department of Agriculture, Food and Forestry, except those on Indian Country. EPA jurisdiction facilities include SIC Codes 1311, 1381, 1382, 1389, and 5171

No additional requirements.

9.6.6 TXR05F000: Facilities in the State of Texas not under the jurisdiction of the Texas Commission on Environmental Quality, except those on Indian Country. EPA- jurisdiction facilities include SIC Codes 1311, 1321, 1381, 1382, and 1389 (other than oil field service company "home base" facilities)

No additional requirements.

9.6.7 TXR05I000: Indian country within the State of Texas

No additional requirements.

9.7 EPA Region 7: Iowa, Kansas, Missouri, Nebraska (except see Region 8 for Pine Ridge Reservation Lands)

9.7.1 IAR05I000: Indian country within the State of Iowa

9.7.1.1 Meskwaki Nation

The following condition applies only to discharges on the Meskwaki Nation (see certification provided by the Pueblo of Isleta, CWA410Cert_Meskwaki Nation_2021 MSGP):

9.7.1.1.1 *Document Submission.*

All original and revised documents required by this permit, including SWPPP, NOI, Change NOI, and NOT, must be submitted electronically to MNRD 30 calendar days prior to the submission deadline to EPA. Incidental reporting, such as AIM documentation and plans, must be submitted to the MNRD at the same time that they are submitted to EPA. See id. at 1-3.

9.7.1.1.2 *Monitoring Data Submission.*

All discharge monitoring data required by this permit should be submitted electronically to the Meskwaki Natural Resources Department (MNRD) at the time of submission to EPA in the same form as it is submitted to EPA. See *id.*

9.7.1.1.3 *Where to Submit Information.*

Contact the MNRD office by phone at 641-484-3511 to gather submission details. See *id.*

9.7.2 KSR05I000: Indian country within the State of Kansas

No additional requirements.

9.7.3 NER05I000: Indian country within the State of Nebraska, except Pine Ridge Reservation lands (see Region 8)

No additional requirements.

9.8 EPA Region 8: Colorado, Montana, North Dakota, South Dakota, Wyoming, Utah (except see Region 9 for Goshute Reservation and Navajo Reservation Lands), the Ute Mountain Reservation in NM, and the Pine Ridge Reservation in NE

9.8.1 COR05F000: Areas in the State of Colorado, except those located on Indian country, subject to industrial activity by a Federal Operator

No additional requirements.

9.8.2 COR05I000: Indian country within the State of Colorado, as well as the portion of the Ute Mountain Reservation located in New Mexico

9.8.2.1 Southern Ute Indian Tribe

The following condition applies only to discharges within the Southern Ute Indian Reservation (see certification provided by the Southern Ute Indian Tribe, CWA410Cert_Southern Ute Indian Tribe_2021 MSGP):

9.8.2.1.1 *Submission of SWPPP.*

The applicant must submit its Stormwater Pollution Prevention Plan (SWPPP) to the Tribe's Environmental Programs Division at the same time or

immediately after the applicant submits its Notice of Intent (NOI) to EPA. At the applicant's option, the submittal may be made electronically.

This condition must be met to give the Tribe an opportunity, in consultation with EPA, to ensure that the permittee has developed an adequate SWPPP for the facility. This

is a minimum requirement for the proposed permit and a less stringent condition does not exist for the Tribe's certification. See *id.* at 1, 4-7.

9.8.2.1.2 *Submission of NOI and NOT.*

The applicant must send a copy of its Notice of Intent (NOI) and Notice of Termination (NOT) to the Tribe's Environmental Programs Division at the same time or immediately after the applicant sends those documents to EPA. At the applicant's option, the submittal may be made electronically. See *id.*

9.8.2.1.3 *Authorization to Inspect.*

The permittee shall allow employees of the Tribe's Environmental Programs Division access to inspect any facility, equipment, practices, or operations regulated or required under this permit and to access records maintained under the conditions of this permit. See *id.*

9.8.2.1.4 *Where to Submit Information*

Information submitted to the Tribe's Environmental Programs Division must be sent to the following address:

Environmental Programs Division
P.O. Box 737 MS#81 Ignacio, CO 81137
jseebach@southernute-nsn.gov

9.8.3 MTR05I000: Indian country within the State of Montana

No additional requirements.

9.8.4 NDR05I000: Indian country within the State of North Dakota, as well as that portion of the Standing Rock Reservation located in South Dakota (except for the portion of the lands within the former boundaries of the Lake Traverse Reservation which is covered under South Dakota permit SDR05I000 listed below)

No additional requirements.

9.8.5 SDR05I000: Indian country within the State of South Dakota, as well as the portion of the Pine Ridge Reservation located in Nebraska and the portion of the lands within the former boundaries of the Lake Traverse Reservation located in North Dakota(except for the Standing Rock Reservation which is covered under North Dakota permit NDR05I000 listed above)

No additional requirements.

9.8.6 UTR05I000: Indian country within the State of Utah, except Goshute and Navajo Reservation lands (see Region 9)

No additional requirements.

9.8.7 WYR05I000: Indian country within the State of Wyoming

No additional requirements.

9.9 EPA Region 9: California, Hawaii, Nevada, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Confederated Tribes of the Goshute Reservation in Utah and Nevada, Indian Country within the State of Arizona including the Navajo Reservation in Utah and New Mexico and Arizona, the Duck Valley Reservation in Idaho, and the Fort McDermitt Reservation in Oregon.

9.9.1 ASR050000: American Samoa

No additional requirements.

9.9.2 AZR05I000: Indian country within the State of Arizona, including Navajo Reservation lands in New Mexico and Utah

No additional requirements.

9.9.3 CAR05I000: Indian country within the State of California

9.9.3.1 Hoopa Valley Tribe

Facilities in the Hoopa Valley Tribe lands are not eligible for stormwater discharge coverage under this permit. Contact the EPA Region 9 office for an individual permit application.

9.9.3.2 Morongo Band of Mission Indians

The following condition applies only to discharges in the Indian country of the Morongo Band of Mission Indians (see certification provided by the Morongo Band of Mission Indian, CWA410Cert_Morongo Band of Mission Indians_2021 MSGP):

9.9.3.2.1 *Compliance with Local Law.*

This certification does not exempt, and is provisional upon compliance with, other applicable statutes and codes administered by Federal and Tribal agencies. Pursuant to the Morongo Band of Mission Indians Surface Water Quality Protection Ordinance (Ordinance 39), all unpermitted discharges must be reported to the Morongo Band of Mission Indians Environmental Protection Department within 24 hours of the incident. See *id.* at 1.

9.9.3.2.2 *Submission of NOI and SWPPP.*

Each operator shall submit copies of the Notices of Intent (NOI) and Stormwater Water Pollution Plans (SWPPPs) to the Morongo Environmental Protection Department at the same time they are submitted to EPA. See *id.*

9.9.3.2.3 *Additional Reporting.*

All monitoring data and exceedance reports shall be provided to the Morongo Environmental Protection Department. See *id.*

9.9.3.2.4 *Where to Send Information.*

All required or requested documents should be submitted to:

Morongo Band of Mission Indians
Environmental Protection Department 12700 Pumarra Road
Banning, CA 92220
Or electronically at epd@morongo-nsn.gov

9.9.3.3 Twenty-Nine Palms Band of Mission Indians

The following condition applies only to discharges in the Indian country of the Twenty-Nine Palms Band of Mission Indians (see certification provided by the Twenty-Nine Palms Band of Mission Indians, CWA410Cert_Twenty-Nine Palms Band of Mission Indians_2021 MSGP):

9.9.3.3.1 *Submission of NOI*

Tribal EPA must receive written notification of the intent to discharge, and must be afforded the opportunity to evaluate whether the specific pollutant discharge proposed will violate TWQS prior to EPA granting the permit. See *id.* at 1-2

9.9.3.3.2 *Reporting*

Permitted entities under the MSGP must keep Tribal EPA informed of authorized discharges under the MSGP by submitting written information about the type, quantity, frequency and location, intended purpose, and potential human health

and/or environmental effects of their activities. These requirements are pursuant to Article 4 of the Twenty-Nine Palms Band of Mission Indians Water Pollution Control Ordinance {022405A). This information may be submitted to Tribal EPA in the form of Storm Water Pollution Prevention Plans (SWPPPs}, monitoring reports, or other reports as required under the MSGP. Spills, leaks, or unpermitted discharges must be reported in writing to Tribal EPA within 24 hours of the incident. See *id.*

9.9.4 GUR050000: Island of Guam

The following condition applies only to discharges in Guam (see certification provided by the Island of Guam, CWA410Cert_Guam_2021 MSGP):

9.9.4.1 *General Conditions*

a. A1. For purposes of this Order, the term "'Applicant" shall mean U.S. Environmental Protection Agency, and its agents, assignees, and contractors.

b. A2. For purposes of this Order, the permit "Permittee" shall mean any facility granted coverage under EPA's 2020 Multi-Sector General Permit.

c. A3. The Applicant shall enforce the proposed 2020 MSGP and ensure that the Permittee complies with the conditions of the permit at all times.

d. A4. Nothing in this Order waives Guam EPA's authority to issue additional orders if Guam EPA determines that further actions are necessary to implement Guam water quality laws, or if additional conditions are necessary to further protect water quality.

e. A5. In the event of changes or amendments to GWQS, or changes in or amendments to the Guam Water Pollution Control Act or the federal Clean Water Act, Guam EPA may issue an amendment to this Order to incorporate any such changes or amendments applicable to the proposed 2020 MSGP.

f. A6. Failure of any person or entity to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

g. A7. All submittals required by this Order shall be sent to the Guam Environmental Protection Agency Attn: 401 Federal Permit Manager, Non-Point Source Program, EMAS Division, 3304 Mariner Avenue, Bldg. 17-3304, Barrigada, Guam 96913, AND via email to jesse.cruz@epa.guam.gov. *The submittals shall be identified with WQC Order #2020-10 and include the MSGP Permit Number, certifying representative's name, title, mailing address and phone number.*

h. A8. This condition is specific to Sector J. Mineral Mining and Dressing covered by the proposed 2020 MSGP: Prior to any earth moving activities, a Clearing and Grading or Building Permit, shall be approved by Guam EPA. Sediment control designs and erosion control Best Management Practices (BMPs) must meet the design standard criteria required in the CNMI and Guam Stormwater Management Manual (October 2006) and in the Guam Soil Erosion and Sediment Control Regulations.

i. A9. This condition is specific to section 2.1 Control Measures of the proposed 2020 MSGP: The selection and installation of stormwater control measures shall meet the design criteria and standards in the CNMI and Guam Stormwater Management Manual (October 2006) and the Guam Soil Erosion and Sediment Control Regulations.

j. AIO. A signed copy of the Notice of Intent (NOi), Stormwater Pollution Prevention Plan (SWPPP), and Notice of Termination (NOT) shall be submitted to Guam EPA, consistent with condition A7, at the same time it is submitted to U.S. EPA for review and approval. Coordination with Guam EPA is encouraged

when the receiving water(s) for the proposed stormwater discharge is/are being identified.

k. A11. The coordinates and location of any proposed discharge outfall(s) shall be submitted to Guam EPA for review and approval, consistent with condition A7. Specific discharge information shall also be submitted.

l. Al2. The NOT application shall be submitted to Guam EPA for review and approval prior to submittal to U.S. EPA, consistent with condition A7. Guam EPA may conduct inspections to ensure that conditions of termination have been met and sources of pollutants have been removed or adequately mitigated. Guam EPA may advise U.S. EPA as to findings and recommendations concerning the Permittee's proposed termination of permit coverage.

m. A13. A copy of all final and local permits shall be provided to Guam EPA within two weeks of receipt, consistent with condition A7.

n. A14. Reports, monitoring and analytical data (e.g. Discharge Monito ring Reports (DMRs), follow-up monitoring reports, Exceedance Reports for Numerical Effluent Limits. etc.) submitted to EPA shall be concurrently submitted to Guam EPA, consistent with condition A7.

o. A 15. A copy of the MSGP, SWPPP, and NOI shall be on file at the Permittee and readily accessible.

p. A16. Guam EPA shall be allowed access to any MSGP industrial facility and mitigation sites at any reasonable time to perform compliance inspections, monitoring, necessary data collection, and/or to ensure that discharge is not in violation of permit conditions, the Guam Water Pollution Control Act, GWQS, or any applicable Guam laws and/or regulations.

q. A17. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters under Guam EPA's jurisdiction (including wetlands) or related aquatic resources, except as specifically provided for in conditions of this Order.

r. A18. A signed Statement of Understanding of Water Quality Certification Conditions shall be submitted to Guam EPA (see Attachment A for an example) per condition A7. See *id.* at 1-3.

9.9.4.2 *Water Quality Conditions*

a. Stormwater discharges to waterbodies under the jurisdiction of Guam EPA must be consistent with the antidegradation policy in 22GAR §510l(b).

b. B2. All discharges shall comply with the Guam Water Pollution Control Act (10 GCA Chapter 47) and implementing regulations at 22 GAR Chapter 5 (GWQS) and 22 GAR Chapter 10 (Guam Soil Erosion and Sediment Control (SESC) Regulations). Furthermore, nothing in this Order shall absolve the Permittee from liability for contamination and any subsequent cleanup of marine waters, surface waters, ground waters, or sediments occurring as a result of proposed 2020 MSGP stormwater discharges.

c. B3. 2020 MSGP industrial stormwater discharges are prohibited as follows:

   i. In Marine Waters, Category M-1 Excellent (22 GAR Chapter 5 §5102(b)(1));
   and

   ii. In Surface Waters, Category S-1 High (22 GAR Chapter 5 §5102(c)(l)).

d. B4. All point source discharges to Guam's waters will be controlled (permitted) through the Federal NPDES, or through the Guam Environmental Protection Agency's local permit program, consistent with the requirements of these programs. 22 GAR Chapter 5 §5104(a)(l2)

e. B5. Dewatering is not permitted under this certification. Dewatering activities shall require a separate Dewatering Permit from the Agency prior to any dewatering activity.

f. B6. Mitigation and/or additional monitoring may be required if site inspections indicate water quality standards have not been met. See *id.*

EMERGENCY/CONTINGENCY MEASURES:

g. B7. The Permittee shall develop and implement a Spill Prevention and Containment Plan.

h. B8. The Permittee shall have adequate and appropriate spill response materials on hand to respond to emergency release of oil, petroleum or any other material into waters of the territory.

i. B9. Any unpermitted discharge into territorial waters or onto land with a potential for entry into territorial waters, is prohibited. If this occurs, the Permittee shall immediately take the following actions:

   i. Cease operations at the location of the violation or spill.

   ii. Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.

   iii. Notify Guam EPA of the failure to comply. All petroleum spills shall be reported immediately to:

      1) Guam's Emergency 911 system

      2) Guam EPA's 24-Hour Spill Response Team at (67 l) 888-6488 or during working hours (67 J) 300-475l

      3) U.S. Coast Guard Sector Guam (671) 355-4824

      4) National Response Center 1-800-424-8802

   iv. Submit a detailed written report to Guam EPA within five days of noncompliance that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information. See *id.*

j. B10. Compliance with this condition does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this Order or the resulting liability from failure to comply. See *id.*

k. B11. Submittal or reporting of any of this information does not provide relief from any subsequent enforcement actions for unpermitted discharges to waters of the United States. See *id.*

9.9.4.3 *Timing Requirements*

a. CI. This Order is valid for five (5) Years from Date of Certification, unless otherwise approved by the Guam EPA Administrator. See *id.*

b. C2. The Permittee shall be required to adhere to the current Guam Coral Spawning Moratorium dates for both hard and so ft corals where in-water activities may impair water quality. These dates can be obtained from the Guam Department of Agriculture, Division of Aquatic and Wildlife Resources, or the NOAA NMFS Pacific Islands Regional Office Habitat Conservation Division. See *id.*

9.9.4.4 *Reporting and Notification Requirement Conditions*

a. Dl. The Permittee shall provide notice to Guam EPA consistent with Condition A7: Immediately upon discovery of noncompliance with the provisions of this Order.

b. D2. A Notice of Violation/Work Stop Order will be issued if certification conditions are not adhered to or when significant or sustained water quality degradation occurs. Work or discharge shall be suspended or halted until the Permittee addresses environmental problems/concerns to Guam EPA's satisfaction. Guam EPA may also levy penalties and fines (IO GCA §47111). Invalidity or enforceability of one or more provisions of this certification shall not affect any other provision of this certification. See *id.*

9.9.4.5 *Right to Appeal*

You have a right to appeal this Order to the Guam EPA Board of Directors, or request a hearing within 30 days of the date of receipt of this Order. Failure to appeal this Order constitutes a waiver of your right to a hearing. Any appeal will proceed pursuant to the provisions of 5 GCA Chapter 9, as provided by 22 GAR §5 l06(i)(7). Unless a written request for a hearing, signed by or on behalf of the person named as Applicant in the accompanying order, is delivered or mailed to the agency within 30 days after this order is signed, Guam EPA may proceed upon the Notice of Intent to Appeal without a hearing. The request for hearing may be made by delivering or mailing the enclosed form entitled Notice of Intent to Appeal (Appendix B) as provided in §9205 to the address below.

To appeal you must do both of the following within 30 days of the date of receipt of this Order:

a. File your appeal and a copy of this Order with the Guam EPA Board of Directors (see address below). Filing means actual receipt by the Guam EPA Board of Directors during regular business hours.

b. Serve a copy of your appeal and this Order to the Administrator in paper form - by mai1 or in person at the address below. Email or facsimile is not accepted. See *id.*

9.9.4.6 *Address Information*

GUAM EPA Board of Directors
3304 Mariner Avenue, Bldg. 17 - 33 04, Barrigada, Guam 96913

9.9.5 JAR050000: Johnston Atoll

No additional requirements.

9.9.6 MWR050000: Midway Island and Wake Island

No additional requirements.

9.9.7 MPR050000: Commonwealth of the Northern Mariana Islands

No additional requirements.

9.9.8 NVR05I000: Indian country within the State of Nevada, including the Duck Valley Reservation in Idaho, the Fort McDermitt Reservation in Oregon and the Confederated Tribes of the Goshute Reservation in Utah

No additional requirements.

9.10 Region 10: Alaska, Idaho (except see Region 9 for Duck Valley Reservation lands), Oregon (except see Region 9 for Fort McDermitt Reservation), Washington

9.10.1 AKR05F000: Areas in the Denali National Park and Preserve subject to industrial activity by a Federal Operator

No additional requirements.

9.10.2 AKR05I000: Indian country lands as defined in 18 U.S.C 1151 within the State of Alaska

No additional requirements.

9.10.3 IDR050000: The State of Idaho, except Indian country lands

Operators in the State of Idaho must meet the following conditions (see certification provided by the State of Idaho, CWA410Cert_ID_2021 MSGP).

9.10.3.1 *Numeric Benchmarks and Effluent Limitations*

Due to the discrete and relatively short duration of storm events that would result in discharges under this MSGP, DEQ believes it is appropriate to set numeric benchmarks and effluent limits based on acute aquatic life criteria rather than chronic aquatic life criteria or human health criteria, which are based on longer-term exposures. See *id.* at 1-7.

pH - The 2020 MSGP proposes a universal pH benchmark range of 6.0-9.0 standard units, which does not comply with Idaho WQS (IDAPA 58.01.02.250.01.a). Therefore, numeric effluent limitations and benchmark monitoring cutoff concentrations for pH shall be 6.5-9.0 standard units.

Total Arsenic - The 2020 MSGP proposes a total arsenic effluent limitation (Subsector G & Sector K) of 1.1 mg/L, which exceeds Idaho's acute and chronic criteria of 0.34 mg/L and 0.15 mg/L, respectively. Given that storms are discrete events of relatively short duration, DEQ believes it is more appropriate to use the acute water quality criteria as benchmark values; therefore, DEQ will require the total arsenic effluent limit to be set equal to Idaho's acute criterion of 0.34 mg/L.

Total Zinc - The 2020 MSGP proposes a monthly average maximum numeric effluent limit for zinc of 0.535 mg/L for Sector K, which will only comply with water quality standards when hardness is greater than 535 mg/L. Similarly, the proposed maximum daily limit and the monthly average maximum limit for zinc is 0.2 mg/L and 0.11 mg/L, respectively for Sector L; these limits do not generally comply with WQS when hardness values for the receiving water are less than 130 mg/L and 85 mg/L, respectively. Therefore, DEQ will require that the total zinc effluent limit be hardness based for all sectors requiring zinc effluent limits, including Sectors K and L.

Cadmium – The 2020 MSGP proposes hardness-based numeric benchmarks for cadmium based on EPA's 2016 Aquatic Life Ambient Water Quality Criteria for Cadmium. Idaho adopted state- specific cadmium criteria different from EPA's recommended national criteria; therefore, DEQ will require that cadmium benchmarks for all sectors subject to cadmium benchmarks be based on Idaho's hardness-based acute cadmium criterion, using the following table:

Freshwater Hardness Range (mg/L)	Cadmium Benchmark (µg/L)
0-24.99	0.20
25-49.99	0.42

50-74.99	0.75
75-99.99	1.05
100-124.99	1.34
125-149.99	1.62
150-174.99	1.88
175-199.99	2.14
200-224.99	2.39
225-249.99	2.64
>250	2.89

Chromium III – The 2020 MSGP proposes a benchmark Chromium III concentration of 570 µg/L. However, this concentration will only comply with Idaho WQS when hardness is 100 mg/L or greater. Therefore, DEQ will require that Chromium III benchmarks be based on the hardness-based acute Chromium III criterion, using the following table:

Freshwater Hardness Range (mg/L)	Chromium III Benchmark (µg/L)
0-49.99	183
50-74.99	323
75-99.99	450
100-124.99	570
125-149.99	684
150-174.99	794
175-199.99	901
200-224.99	1005
225-249.99	1107
>250	1207

Total Recoverable Copper – The 2020 MSGP proposes hardness-based numeric benchmarks for copper. However, Idaho water quality standards require that copper criteria be derived using the Biotic Ligand Model (BLM). In order to ensure compliance with the copper BLM criteria, the permittee for each facility subject to copper benchmarks in the 2020 MSGP must implement one of the following options:

a. Utilize a numeric benchmark for copper that corresponds to the most conservative estimate of acute copper criteria for Idaho waters: 1.0 µg/L; or

b. Collect BLM input parameters as described in IDAPA 58.01.02.210.03.c concurrent with quarterly benchmark monitoring, use the BLM to derive an acute copper criterion based on these data, and apply that BLM-derived criterion as the numeric copper benchmark; or

c. Make a written application for, and obtain DEQ approval of, a numeric copper benchmark that is protective of aquatic life in the receiving waters before discharging under the 2020 MSGP. See *id.*

9.10.3.2 *Monitoring of Discharges to Impaired Waters*

The proposed 2020 MSGP does not require monitoring on impaired waters where no pollutant has been identified as the cause of impairment. For water bodies included on the state's 303(d) list (Category 5 of the Integrated Report) as "cause unknown," or "combined biota/habitat assessments" the permittee must monitor for suspected pollutants listed in the cause comments section of the integrated report (e.g., nutrients, metals, pesticides). See *id.*

9.10.3.3 *New or Expanding Discharges*

New dischargers or existing dischargers wishing to expand their discharge to high-quality waters are only eligible for coverage under the MSGP if the discharger establishes, to the satisfaction of EPA and DEQ, that the new or expanded discharge will not result in an increase in the concentration of pollutants relevant to the use for which the water is considered high quality, or that the increase constitutes insignificant degradation as defined in the WQS (IDAPA 58.01.02.052.08.a).

A new discharger or an existing discharger wishing to expand must include an analysisregarding whether the new or expanded discharge will cause an increase in the pollutants relevant to the use for which the water is considered high quality. If there is an increase, the permittee must identify whether that increase constitutes insignificant degradation in the NOI, or in the planned changes report. These NOIs and planned changes reports must be submitted to both EPA and DEQ.

If DEQ determines the new discharge or planned changes of an existing discharger will result in significant degradation, the permittee must provide to DEQ an alternatives analysis (IDAPA 58.01.02.052.08.c), a socioeconomic justification (IDAPA 58.01.02.052.08.d) and information regarding other source controls (IDAPA 58.01.02.052.08.b), and obtain DEQ's approval in accordance with Idaho's antidegradation implementation process (IDAPA 58.01.02.052.08.e). See *id.*

9.10.3.4 *Outstanding Resource Waters.*

Any permittee proposing to discharge to an outstanding resource water shall not be covered under this General Permit (Permit Part I.E.8) and is required to apply for an individual IPDES permit from DEQ (IDAPA 58.01.02.052.09). See *id.*

9.10.3.5 *Sector L – Stormwater and Leachate*

Stormwater entering a landfill, including runoff from areas that have received

daily cover which may have contacted waste material, must be managed as leachate and is thus not eligible for coverage under the MSGP (40 CFR 258.26(a)(2); Municipal Solid Waste Landfill Criteria Technical Manual, EPA 530-R-93-017, 1998). Stormwater from a closed landfill or from areas of the landfill that have received final cover is not leachate and may be covered under the MSGP. See *id.*

9.10.3.6 *Stormwater Pollution Prevention Plan (SWPPP) Availability.*

If requested by DEQ, the permittee must submit a copy of the SWPPP to DEQ within 14 days of the request. See *id.*

9.10.3.7 *Reporting of Discharges Containing Hazardous Materials or Petroleum Products.*

Any spill of hazardous materials must be immediately reported to the State Communications Center by calling 1-800-632-8000 or 208-846-7610.

Spills must also be reported to the appropriate DEQ Regional Office (Table 1). Spills of petroleum products that exceed 25 gallons or that cause a visible sheen on surface waters should be reported to DEQ within 24-hours. Petroleum product spills of less than 25 gallons or spills that do not cause sheen on surface waters must only be reported to DEQ if clean-up cannot be accomplished within 24-hours (IDAPA 58.01.02.850, 58.01.02.851, 58.01.02.852). See *id.*

9.10.3.8 *Other Reporting Requirements*

Copies of the following information must be sent to the appropriate DEQ Regional Office:

a. Notices of Intent and Termination (NOIs and NOTs), as required by Permit Part 7.2.1

b. Monitoring data collected pursuant to Permit Part 4 of the MSGP, as well as any additional monitoring required by this § 401 water quality certification

c. Exceedance Reports, as required by Permit Part 7.5

d. Planned Changes Reports, as required by Permit Parts 7.6.4 and 7.6.5

Both monitoring data and exceedance reports must be sent to the appropriate DEQ Regional Office within 30 days of receipt of the analytical results. DEQ Regional Office contact information is listed in Table 1. See *id.*

9.10.3.9 *Material Modifications*

Pursuant to 33 U.S.C. § 1341, this certification is conditioned upon the requirement that any material modification of the permit or the permitted activities—including without limitation, significant changes to the MSGP, any modifications of the permit to reflect new or modified TMDLs, wasteload allocations, site-specific criteria, variances, or other new information—shall first be provided to DEQ for review to determine compliance with Idaho WQS and to provide additional certification pursuant to Section 401. See *id.*

9.10.3.10 *Alternative Limitations*

The following condition in the MSGP can be made less stringent and still comply with WQS:

Benchmark Values

The benchmark value for arsenic is 150 µg/L. This value is equivalent to Idaho's chronic water quality criterion. Given that storms are discrete events of relatively short duration, DEQ believes it is more appropriate to use the acute water quality

criterion as a benchmark value. Therefore, the benchmark value for arsenic can be set equal to 340 µg/L, and still comply with Idaho WQS. See *id.*

9.10.3.11 *Idaho DEQ Regional and State Office Contacts.*

Table 1. Idaho DEQ regional and state office contacts.

Regional and State Office	*Address*	*Phone Number*	*Email*
Boise	1145 N. Orchard St., Boise 83706	208-373-0550	kati.carberry@deq.idaho.gov
Coeur d'Alene	2110 Ironwood Parkway, Coeur d'Alene 83814	208-769-1422	chantilly.higbee@deq.idaho.gov
Idaho Falls	900 N. Skyline Dr., Suite B, Idaho Falls 83402	208-528-2650	troy.saffle@deq.idaho.gov
Lewiston	1118 F St., Lewiston 83501	208-799-4370	sujata.connell@deq.idaho.gov
Pocatello	444 Hospital Way, #300, Pocatello 83201	208-236-6160	lynn.vanevery@deq.idaho.gov
Twin Falls	650 Addison Avenue West, Suite 110, Twin Falls 83301	208-736-2190	sean.woodhead@deq.idaho.gov
State Office	1410 North Hilton St., Boise 83706	208-373-0502	jason.pappani@deq.idaho.gov

9.10.4 IDR05I000: Indian country lands within the State of Idaho, except Duck Valley Reservation lands, which are covered under Nevada permit NVR05I000

9.10.4.1 Shoshone-Bannock Tribes

The following conditions apply only to discharges to waters of the Shoshone-Bannock Tribes (see certification provided by the Shoshone-Bannock Tribes, CWA410Cert_Shoshone-Bannock Tribes_2021 MSGP):

9.10.4.1.1 *Submission of NOI, Monitoring Data, and Reports.*

Copies of the following information must be sent to the SBT-WRD:

- Notice of Intents (NOI)
- Monitoring data collected pursuant to section 4.2 of the MSGP
- Exceedance Reports

The monitoring data and exceedance reports must be sent to the SBT-WRD within thirty (30) days of receipt of analytical results. See *id* at1-3.

Contact information for SBT-WRD:

Shoshone-Bannock Tribes Water Resources Department
PO Box 306 Pima Drive
Fort Hall, ID 83203
Phone: (208) 239-4582
Fax:(208)239-4592

9.10.4.1.2 *SWPPP Availability.*

If requested by the SBT-WRD, the permittee must submit a copy of the SW PPP to SBT-WRD within fourteen (14) days of the request. See *id.*

9.10.5 ORR05I000: Indian country lands within the State of Oregon, except Fort McDermitt Reservation lands, which are covered under Nevada permit NVR05I000

No additional requirements.

9.10.6 WAR05I000: Indian country lands within the State of Washington

9.10.6.1 Confederated Tribes of the Colville Reservation

No additional requirements.

9.10.6.2 Lummi Nation

No additional requirements.

9.10.6.3 Puyallup Tribe of Indians

No additional requirements.

9.10.6.4 Port Gamble S'Klallam Tribe

The following conditions apply only to discharges to waters of the Port Gamble S'Klallam Tribal Land (see certification provided by the Port Gamble S'Klallam Tribe, CWA410Cert_Port Gamble S'Klallam Tribe_2021 MSGP):

9.10.6.4.1 *Compliance with Port Gamble S'Klallam Tribe Water Quality Standards.*

Each operator shall be responsible for achieving compliance with the Port Gamble S'Klallam Tribe Water Quality Standards for Surface Waters. Please see the PGST website (pgst.nsn.us) to review a copy of the Port Gamble S'Klallam Tribe Water Quality Standards for Surface Waters See *id.* at 1.

9.10.6.4.2 *Submission of SWPPP*

Each operator shall develop and submit a Storm Water Pollution Prevention Plan to the Port Gamble S'Klallam Natural Resources Department for review and approval by the Tribe prior to beginning any discharge activities. See *id.*

9.10.6.4.3 *Submission of NOI, Reports, and NOT*

Each operator shall submit a copy of the Notice of Intent, analytical monitoring results, any Exceedance Reports, Annual Reports, and Notice of Termination to the PGST Natural Resources Department at the same time it is submitted to the Environmental Protection Agency (EPA). See *id.*

9.10.6.5 Spokane Tribe of Indians

The following conditions apply only to discharges to waters of the Spokane Tribal Land (see certification provided by the Spokane Tribe of Indians, CWA410Cert_Spokane Tribe of Indians_2021 MSGP):

9.10.6.5.1 *Compliance with Water Quality Standards.*

The permitee shall be responsible for achieving compliance with the Spokane Tribal Water Quality Standards. See *id.* at 1.

9.10.6.5.2 *Submission of SWPPP*

The permitee shall submit all Pollution Prevention Plans to the Spokane Tribal Water Control Board for review and approval at the same time they are submitted to EPA and prior to any discharge activities. See *id.*

9.10.6.5.3 *Compliance with IRMP*

The permitee shall comply with all Spokane Tribal Integrated Resource Management Plan (IRMP) guidelines for land use activities and disturbances. See *id.*

9.10.6.5.4 *Inspection.*

The permitee shall allow the Tribal Water Control Board to inspect the storm water management system and adopt recommendations made anytime throughout its operation. See *id.*

9.10.6.5.5 *Monitoring,*

Monitoring of the discharge shall occur at a level indicated by EPA, the Tribe, are subject to change, and shall be submitted to both entities. See *id.*

9.10.6.5.6 *Where to send information.*

Water Control Board c/o Brian Crossley
PO Box 480
Wellpinit, WA 99040

9.10.6.6 Swinomish Indian Tribal Community

Facilities in the Swinomish Indian Tribal lands and are not eligible for stormwater discharge coverage under this permit. Contact the EPA Region 10 office for an individual permit application.

9.10.6.7 Tulalip Tribes

The following conditions apply only to discharges to waters of the Tulalip Tribes (see certification provided by the Tulalip Tribes, CWA410Cert_Tulalip Tribes_2021 MSGP):

9.10.6.7.1 *Submission of NOI, NOT and No Exposure.*

Copies of the Notice of Intent (NOI), Notice of Termination (NOT), and No Exposure Certification shall be submitted to the Tribe's Natural Resources Department. See *id.* at 1-2.

9.10.6.7.2 *Submission of SWPPP.*

A copy of the Stormwater Pollution Plans (SWPPPs) shall be submitted to the Tribe's Natural Resources Department at least thirty (30) days in advance of submitting the NOI to EPA. See *id.*

9.10.6.7.3 *Compliance with Tribe's Water Quality Standards:*

Each permittee shall be responsible for achieving compliance with the Tribe's Water Quality Standards. See *id.*

9.10.6.7.4 *Submission and approval of Monitoring Plans.*

A monitoring plan, if applicable, shall be submitted to the Tribe's Natural Resources Department and approved by the Tribe prior to initiation of monitoring required under Part 6 of this permit. See *id.*

9.10.6.7.5 *Submission of Monitoring Data and Reports:*

The results of any monitoring required by this permit and reports must be sent to the Tribe's Natural Resources Department, including a description of the corrective

actions required and undertaken to meet effluent limits or benchmarks (as applicable). See *id.*

9.10.6.7.6 *Authorization to Inspect.*

The Natural Resources Department staff may conduct an inspection of any facility covered by this permit to ensure compliance with tribal water quality standards. The Department may enforce its certification conditions.

The Tulalip Tribes are federally recognized successors in the interest to the Snohomish, Snoqualmie, Skykomish, and other allied tribes and bands signatory to the Treaty of Point Elliott. See *id.*

9.10.6.7.7 *Incorporation by reference.*

This certification does not exempt the applicant from compliance with other statues and codes administered by the Tribes, county, state and federal agencies. See *id.*

9.10.6.7.8 *Invalidation.*

This certification will cease to be valid if the project is constructed and/or operated in a manner not consistent with the project description contained in the permit. This certification will also cease to be valid and the applicant must reapply with an updated application if information contained in the permit is voided by subsequent submittals. See *id.*

9.10.6.7.9 *Modification.*

Nothing in this certification waives the Tulalip Tribes of Washington's authority to issue modifications to this certification if additional impacts due to operational changes are identified, or if additional conditions are necessary to protect water quality or further protect the Tribal Communities interest. See *id.*

9.10.6.7.10 *Permits on-site.*

A copy of the permit shall be kept on the job site and readily available for reference by the construction supervisor, construction managers and site foreman, and Tribal inspectors. In addition, a sign of permit coverage needs to be posted at a safe, publicly accessible location. See *id.*

9.10.6.7.11 *Project Management.*

The applicant shall ensure that project or site managers, construction managers and site foreman, and other responsible parties have read and understand conditions of the permit, this certification, and other relevant documents, to avoid violations or noncompliance with this certification. See *id.*

9.10.6.7.12 *Emergencies/Contingency Measures.*

In the event the operator or applicant is unable to comply with the permit terms and conditions due to any cause, the operator or applicant shall immediately take action to stop the violation and correct the problem, and immediately report spill events to EPA's 24-hour Spill Response Team at (206) 553-1263 and the Tulalip Tribes Police Department (360) 716-5959. Compliance with this condition does not relieve the applicant from responsibility to maintain continuous compliance with the terms and conditions of this certification or the resulting liability from failure to comply. See *id.*

9.10.6.7.13 *Tribal ESA Consultation.*

Consultation with the Tribes is required when permitted actions may effect federally-listed threatened or endangered species and designated critical habitat. Information required as part of the consultation shall include:

a. Basis of the determination that permit actions will not adversely affect federally-listed as endangered or threatened ("listed") under the Endangered Species Act (ESA) and will not result in the adverse modification or destruction of designated critical habitat including appropriate measures to be undertaken to avoid or eliminate the likelihood of adverse effects (under Criterion E in Section 1.1.4.5); and

b. Notice of Intent form complete with extent of action area, list of federally-listed threatened or endangered species or designated critical habitat likely to occur in action area, list of potential pollutants (if you are a new discharger) or list of pollutants for which you have ever exceeded an applicable benchmark or effluent limitations guideline, or for which your discharge has ever been found to cause or contribute to an exceedance of an applicable water quality standard (if you are an existing discharger). See *id.*

9.10.6.7.14 ***Discharges to CERCLA Sites:***

This permit does not authorize direct discharges to certain sites undergoing remedial cleanup actions pursuant to the Comprehensive Environmental Response,

Compensation and Liability Act (CERCLA) unless first approved by the appropriate EPA Regional office. In the case of the Tulalip Landfill site, the Tulalip Tribes also requests notification by the facility and consultation with EPA prior to discharge. Contaminants at this site may include but are not limited to: dioxins, furans, arsenic, copper, lead, zinc, 4-methyl-phenol, Hex-CB, HPAHs, PCBs, PCE, cadmium, mercury, and LPAHs. See *id.*

9.10.6.7.15 ***Discharge-related Activities that have Potential to Cause an Adverse Effect on Historic Properties:***

Installation of stormwater controls that involve subsurface disturbances may potentially have an adverse impact on historic properties. Procedures detailed in Appendix F of the permit shall be completed. Richard Young, of the Tulalip Tribe's Cultural Resources Department shall be contacted prior to initiating discharge-related activities that may have an impact on historic properties. His contact information is (360) 716-2652 and ryoung@tulaliptribes-nsn.gov. See *id.*

9.10.6.7.16 ***Where to Submit Information:***

All required or requested documents shall be sent to the:

Tulalip Tribes
Natural Resources Environmental Division c/o Kurt Nelson and Valerie Streeter
6704 Marine Drive
Tulalip, Washington 98271

9.10.7 WAR05F000: Areas in the State of Washington, except those located on Indian Country lands, subject to industrial activity by a Federal Operator

Permittees in the State of Washington must meet the following conditions (see certification provided by the State of Washington, CWA410Cert_WA_2021 MSGP):

9.10.7.1 ***General Conditions.***

a. For purposes of this Order, the term "Applicant" shall mean U.S. Environmental Protection Agency, and its agents, assignees and contractors.

b. For Purposes of this Order, the Permit "Permittee" shall mean any facility granted coverage under EPA's Multi Sector General Permit.

c. The Applicant shall enforce the permit and ensure that the Permittee complies with

the conditions of the permits at all times.

d. Nothing in the Certification waives Ecology's authority to issue additional orders if Ecology determines that further actions are necessary to implement the water quality laws of the state. Further, Ecology retains continuing jurisdiction to make modifications hereto through supplemental orders, if additional impacts due to project construction or operation are identified (*e.g.,* violations of water quality standards, downstream erosion, etc.), or if additional conditions are necessary to further protect water quality.

e. In the event of changes or amendments to the state water quality, ground water quality, or sediment standards, or changes in or amendments to the state Water Pollution Control Act (RCW 90.48) or the federal Clean Water Act, Ecology may issue an amendment to this Certification to incorporate any such changes or amendments applicable to this project.

f. Failure of any person or entity to comply with this Certification may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of the Certification. See *id.* at 3.

9.10.7.2 *Water Quality.*

a. This Certification does not authorize exceedances of water quality standards established in chapter 173-201A WAC.

b. Discharges shall not cause or contribute to a violation of surface water quality standards (chapter 173-201A WAC), ground water quality standards (chapter 173-200 WAV), sediment management standards (chapter 173-204 WAC), and human health based criteria in the National Toxics Rule (40 CRF Part 131.36). Discharges that are not in compliance with these standards are not authorized.

c. Prior to the discharge of stormwater and non-stormwater to waters of the state, the Permittee shall apply all known, available, and reasonable methods of prevention, control, and treatment (AKART). This includes the preparation and implementation of an adequate Stormwater Pollution Prevention Plan (SWPPP), with all appropriate best management practices (BMPs) installed and maintained in accordance with the SWPPP and the terms and conditions of this permit. The Permittee shall include each of the following mandatory BMPs in the SWPPP and implement the BMPs. The Permittee may omit individual BMPs if site conditions render the BMP unnecessary or infeasible and the Permittee provides alternative and equally effective BMPs. The Permittee must justify each BMP omission in the SWPPP. BMPs shall be consistent with:

   i. *2019 Stormwater Management Manual for Western Washington*, for sites west of the crest of the Cascade mountains; or

   ii. *2019 Stormwater Management Manual for Eastern Washington*, for sites east of the crest of the Cascade Mountains; or

   iii. Revisions to the manuals in S3.A.3. a & b., or other stormwater management guidance documents or manuals which provide an equivalent level of pollution prevention, that are approved by Ecology and incorporated into this permit in accordance with the permit modification requirements of WAC 173-226-230. For purposes of this section, the documents listed in Appendix 10 of the August 1, 2019 Phase I Municipal Stormwater Permit are hereby incorporated into this permit; or

   iv. Documentation in the SWPPP that the BMPs selected are demonstrably equivalent to practices contained in stormwater technical manuals approved by Ecology, including the proper selection, implementation, and maintenance of all applicable and appropriate best management practices for on-site pollution control.

d. Additional Sampling Requirements and Effluent Limits for Discharges to Certain Impaired Waters and Puget Sound Sediment Cleanup Sites.

i. Permittees discharging to a 303(d)-listed waterbody (Category 5), either directly or indirectly through a stormwater drainage system, shall comply with the applicable sampling requirements and numeric effluent limits in Table 1.

For purposes of this condition, "applicable sampling requirements and effluent limits" means the sampling and effluent limits in Table 1 that correspond to the specific parameter(s) the receiving water is 303(d)-listed for at the time of permit coverage, or Total Suspended Solids (TSS) if the waterbody is 303(d)-listed (Category 5) for sediment quality at the time of MSGP coverage.

If a discharge point is subject to an impaired waterbody effluent limit for a parameter that also has a benchmark, the effluent limit supersedes the benchmark. All references to Category 5 pertain to the 2012 EPA-approved Water Quality Assessment.

The 2012 EPA-approved Water Quality Assessment may be viewed online at: http://www.ecy.wa.gov/programs/wq/links/wq_assessments.html. See *id.*

Table 1: Sampling and Effluent Limits Applicable to Discharges to 303(d)-listed Waters

Parameter	Units	Maximum Daily[a]		Analytical Method [b]	Laboratory Quantitation Level [c]	Sampling Frequency[d]
		Freshwater	Marine			
Turbidity	NTUs	25	25	EPA 180.1 Meter	0.5	1/quarter
pH	SU	[j]	Between 7.0 and 8.5	Meter	±0.1	1/quarter
Fecal Coliform Bacteria	# colonies/ 100 mL	[i]	[i]	SM 9222D	20 CFU/ 100 mL	1/quarter
TSS [f]	mg/L	30	30	SM2540-D	5	1/quarter
Phosphorus, Total	mg/L	[g]	[g]	EPA 365.1	0.01	1/quarter
Total Ammonia (as N)	mg/L	[g]	[g]	SM 4500 NH_3-GH	0.3	1/quarter
Copper, Total	µg/L	[g]	[g]	EPA 200.8	2.0	1/quarter
Lead, Total	µg/L	[g]	[g]	EPA 200.8	0.5	1/quarter
Mercury, Total	µg/L	2.1	1.8	EPA1631E	0.0005	1/quarter
Zinc, Total	µg/L	[g]	[g]	EPA 200.8	2.5	1/quarter
Pentachlorophenol	µg/L	9[h]	[g]	EPA 625	1.0	1/quarter

[a] Maximum daily effluent limit means the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day. The daily discharge is the average measurement of the pollutant over the day; this does not apply to pH.

[b.] Or other equivalent method with the same reporting level.

c The Permittee shall ensure laboratory results comply with the quantitation level (QL) specified in the table. However, if an alternate method from 40 CFR Part 136 is sufficient to produce measurable results in the sample, the Permittee may use that method for analysis. If the Permittee uses an alternative method it must report the test method and QL on the DMR. If the Permittee is unable to obtain the required QL due to matrix effects, the Permittee must report the matrix-specific method detection level (MDL) and QL on the DMR.

d. 1/quarter means at least one sample taken each quarter, e.g., Q1 = Jan 1 – March 31, Q2 = April 1 – June 30.

e Permittees shall use either a calibrated pH meter consistent with EPA 9040 or an approved state method.

f. Permittees who discharge to a waterbody 303(d)-listed (Category 5) for sediment quality shall sample the discharge for TSS.

g. Site-specific effluent limitation will be assigned at the time of permit coverage.

h. Based on a pH of 7.0.

i. A numeric effluent limit does not apply, but Permittees must sample according to Table 1. In addition, the following mandatory BMPs shall be incorporated into the SWPPP and implemented; the Permittee must:

1) Use all known, available and reasonable methods to prevent rodents, birds, and other animals from feeding/nesting/roosting at the facility. Nothing in this section shall be construed as allowing violations of any applicable federal, state or local statutes, ordinances, or regulations including the Migratory Bird Treaty Act.

2) Perform at least one annual dry weather inspection of the stormwater system to identify and eliminate sanitary sewer cross-connections.

3) Install structural source control BMPs to address on-site activities and sources that could cause bacterial contamination (*e.g.*, dumpsters, compost piles, food waste, and animal products).

4) Implement operational source control BMPs to prevent bacterial contamination from any known sources of fecal coliform bacteria (*e.g.*, animal waste).

5) Conduct additional bacteria-related sampling and/or BMPs, if ordered by Ecology on a case-by-case basis.

j. The effluent limit for a Permittee who discharges to a freshwater body 303(d)-listed for pH is: Between 6.0 and 8.5, if the 303(d)-listing is for high pH only; Between 6.5 and 9.0, if the 303(d)-listing is for low pH only; and Between 6.5 and 8.5 if the 303(d)-listing is for both low and high pH. All pH effluent limits are applied end-of-pipe.

ii. Permittees discharging to a Puget Sound Sediment Cleanup Site[3], either directly or indirectly through a stormwater drainage system, shall comply with this section:

1) Permittees shall sample the discharge for Total Suspended Solids (TSS) in accordance with Table 2.

2) If the waterbody is listed within Category 5 (sediment medium) where the *outfall* discharges to the waterbody, the discharge is subject to the TSS numeric effluent limit in Attachment A, Table 1.

[3] **Puget Sound Sediment Cleanup Site**: means Category 4B (Sediment) portions of Budd Inlet (Inner), Commencement Bay (Inner), Commencement Bay (Outer), Dalco Passage and East Passage, Duwamish Waterway (including East and West Waterway), Eagle Harbor, Elliot Bay, Hood Canal (North), Liberty Bay, Rosario Strait, Sinclair Inlet, and Thea Foss Waterway; Category 5 (Sediment) portions of the Duwamish Waterway; Category 4A (Sediment) portions of Bellingham Bay (Inner); and the Everett/Port Gardener, Oakland Bay/Shelton Harbor, and Port Angeles Harbor sediment cleanup areas, as mapped on Ecology's ISGP website. All references to Category 4A, 4B and 5 pertain to the 2012 EPA-approved Water Quality Assessment

All references to Category 4B and 5 pertain to the 2012 EPA-approved Water Quality Assessment, available online at: http://www.ecy.wa.gov/programs/wq/links/wq_assessments.html.

3) If the waterbody is not listed within Category 5 (sediment medium) where the outfall discharges to the waterbody (*e.g.*, Category 4B, etc.), the discharge is subject to the TSS benchmark in Attachment A, Table 2. If the discharge is subject to more than one TSS benchmark value (*i.e.*, two different benchmarks), the lower benchmark supersedes the higher one. If a discharge exceeds the TSS benchmark, the Permittee shall implement corrective actions in accordance with the MSGP.

4) Permittees shall remove accumulated solids from storm drain lines (including inlets, catch basins, sumps, conveyance lines, and oil/water separators) owned or controlled by the Permittee at least once during the term of the MSGP.

   Permittees shall conduct line cleaning operations (*e.g.*, jetting, vacuuming, removal, loading, storage, and/or transport) using BMPs to prevent discharges of storm drain solids to surface waters of the state.

   Removed storm drain solids and liquids shall be disposed of in accordance with applicable laws and regulations and documented in the SWPPP.

5) Prior to removing storm drain solids according to Attachment A. Condition 2.D, Permittees shall sample and analyze storm drain solids in accordance with Table 3. Storm drain solids must be collected/sampled from a representative catch basin, sump, pipe, or other feature within the storm drain system that corresponds to the discharge point where Total Suspended Solids (TSS) samples are collected per Attachment A. Samples may be either a single grab sample or a composite sample. Samples must be representative of the storm drain solids generated and accumulated in the facility's drainage system. To the extent possible, sample locations must exclude portions of the drainage system affected by water from off-site sources (*e.g.*, run-on from off-site properties, tidal influence, backflow). See *id.*

Table 2: Benchmarks and Sampling Requirements Applicable to Discharges to Puget Sound Sediment Cleanup Sites that are not Category 5 for Sediment Quality

Parameter	Units	Benchmark Value [a]	Analytical Method	Laboratory Quantitation Level [b]	Minimum Sampling Frequency [c]
TSS	mg/L	30	SM2540-D	5	1/quarter

a. Permittees sampling more than once per quarter shall average the sample results and compare the average value to the benchmark to determine if it the discharge has exceeded the benchmark value. However, if Permittees collect more than one sample during a 24-hour period, they must first calculate the daily average of the individual grab sample results collected during that 24-hour period; then use the daily average to calculate a quarterly average.

b. The Permittee shall ensure laboratory results comply with the quantitation level (QL) specified in the table. However, if an alternate method from 40 CFR Part 136 is sufficient to produce measurable results in the sample, the Permittee may use that method for analysis. If the Permittee uses an alternative method it must report the test method and QL on the DMR. If the Permittee is unable to obtain the required QL due to matrix effects, the Permittee must report the matrix-specific method detection level (MDL) and QL on the DMR.

c. 1/quarter means at least one sample taken each quarter, year-round.

Table 3: Sampling and Analytical Procedures for Storm Drain Solids

Analyte	Method in Sediment	Quantitation Level[a]
Conventional Parameters		
Percent total solids	SM 2540G, or ASTM Method D 2216	NA
Total organic carbon	Puget Sound Estuary Protocols (PSEP 1997), or EPA 9060	0.1%
Grain size	Ecology Method Sieve and Pipette (ASTM 1997), ASTMD422, or PSEP 1986/2003	NA
Metals		
Antimony, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw[b]
Arsenic, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.1 mg/kg dw
Beryllium, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Cadmium, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Chromium, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.5 mg/kg dw
Copper, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Lead, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Mercury, Total	EPA Method 1631E, or EPA Method 7471B	0.005 mg/kg dw
Nickel, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.1 mg/kg dw
Selenium, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.5 mg/kg dw
Silver, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.1 mg/kg dw
Thallium, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Zinc, Total	EPA Method 200.8 (ICP/MS) , EPA Method 6010 or EPA Method 6020	5.0 mg/kg dw
Organics		
PAH compounds[c]	EPA Method 8270 D	70 µg/kg dw

PCBs (aroclors), Total[d]	EPA Method 8082	10 µg/kg dw
Petroleum Hydrocarbons		
NWTPH-Dx	NWTPH-Dx	25.0-100.0 mg/kg dw

a. The Permittee shall ensure laboratory results comply with the quantitation level (QL) specified in the table. However, if an alternate method is sufficient to produce measurable results in the sample, the Permittee may use that method for analysis. If the Permittee uses an alternative method, it must report the test method and QL on the sediment monitoring report. All results shall be reported. For values below the QL, or where a QL is not specified, report results at the method detection level (MDL) from the lab and the qualifier of "U" for undetected at that concentration. If the Permittee is unable to obtain the required QL due to matrix effects, the Permittee must report the matrix-specific MDL and QL on the DMR.

b. dw = dry weight.

c. PAH compounds include: 1-methylnaphthalene, 2-methylnaphthalene, 2-chloronaphthalene, acenaphthylene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b, k)fluoranthene, benzo(ghi)perylene, dibenzo(a,h)anthracene, dibenzofuran, carbazole, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene.

d. Total = sum of PCB aroclors 1016+1221+1232+1242+1248+1254+1260.

6) All storm drain solids sampling data shall be reported to EPA no later than the DMR due date for the reporting period in which the solids were sampled. A copy of the lab report shall be submitted to EPA. See *id.*

e. Requirements for Discharges to Waters with Applicable TMDLs

i. The Permittee shall comply with applicable TMDL determinations. Applicable TMDLs or TMDL determinations are TMDLs which have been completed by the issuance date of this permit, or which have been completed prior to the date that the Permittee's NOI is received by EPA, whichever is later. EPA will list the Permittee's requirements to comply with this condition on the letter of permit coverage.

ii. TMDL requirements associated with TMDLs completed after the issuance date of this permit only become effective if they are imposed through an administrative order issued by EPA.

iii. Where Ecology has established a TMDL wasteload allocation and sampling requirements for the Permittee's discharge, the Permittee shall comply with all requirements of the TMDL.

1) If a discharge point is subject to a TMDL-related effluent limit for a parameter that also has a benchmark, the effluent limit supersedes the benchmark.

iv. Where Ecology has established a TMDL general wasteload allocation for industrial stormwater discharges for a parameter present in the Permittee's discharge, but has not identified specific requirements, EPA will assume the Permittee's compliance with the terms and conditions of the permit complies with the approved TMDL.

v. Where Ecology has not established a TMDL wasteload allocation for industrial stormwater discharges for a parameter present in the Permittee's discharge, but has not excluded these discharges, EPA will assume the Permittee's compliance with the terms and conditions of this permit complies with the approved TMDL.

vi. Where a TMDL for a parameter present in the Permittee's discharge specifically precludes or prohibits discharges of stormwater associated with industrial activity, the Permittee is not eligible for coverage under the MSGP. See *id.*

Appendix A - Definitions, Abbreviations, and Acronyms (for the purposes of the 2021 MSGP)

A.1. DEFINITIONS

Action Area – all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. See 50 CFR 402. For the purposes of this permit and for application of Endangered Species Act requirements, the following areas are included in the definition of action area:

- The areas where stormwater discharges originate and flow from the industrial facility to the point of discharge into receiving waters. (Example: Where stormwater flows into a ditch, swale, or gully that leads to receiving waters and where listed species (such as listed amphibians) are found in the ditch, swale, or gully.)
- The areas where stormwater from industrial activities discharge into receiving waters and the areas in the immediate vicinity of the point of discharge. (Example: Where stormwater from industrial activities discharges into a stream segment that is known to harbor listed aquatic species.)
- The areas where stormwater controls will be constructed and operated, including any areas where stormwater flows to and from the stormwater controls. (Example: Where a stormwater retention pond would be built.)
- The areas upstream and/or downstream from the stormwater discharge into a stream segment that may be affected by these discharges. (Example: Where sediment discharged to a receiving stream settles downstream and impacts a breeding area of a listed aquatic species.)

Antidegradation Policy or Antidegradation Requirements – the water quality standards regulation that requires States and Tribes to establish a three-tiered antidegradation program:

1. Tier 1 maintains and protects existing uses and water quality conditions necessary to support such uses. An existing use can be established by demonstrating that fishing, swimming, or other uses have actually occurred since November 28, 1975, or that the water quality is suitable to allow such uses to occur. Where an existing use is established, it must be protected even if it is not listed in the water quality standards as a designated use. Tier 1 requirements are applicable to all surface waters.

2. Tier 2 maintains and protects "high quality" waters -- water bodies where existing conditions are better than necessary to support CWA § 101(a)(2) "fishable/swimmable" uses. Water quality can be lowered in such waters. However, state and tribal Tier 2 programs identify procedures that must be followed and questions that must be answered before a reduction in water quality can be allowed. In no case may water quality be lowered to a level which would interfere with existing or designated uses.

3. Tier 3 maintains and protects water quality in outstanding national resource waters (ONRWs). Except for certain temporary changes, water quality cannot be lowered in such waters. ONRWs generally include the highest quality waters of the United States. However, the ONRW classification also offers special protection for waters of exceptional ecological significance, i.e., those which are important, unique, or sensitive ecologically. Decisions regarding which water bodies qualify to be ONRWs are made by States and authorized Indian Tribes.

Arid Areas – areas where annual rainfall averages from 0 to 10 inches.

Best Available Technology Economically Achievable (BAT) – defined in CWA section 304(b)(2).

Best Conventional Pollutant Control Technology (BCT) – defined in CWA section 304(b)(4).

Best Practicable Control Technology Currently Available (BPT) – defined in CWA section 304(b)(1).

Bypass – the intentional diversion of waste streams from any portion of a treatment facility. See 40 CFR 122.41(m)(1)(i).

CERCLA Site (i.e., Superfund Site) – for the purposes of this permit, a site as defined in Section 101(9) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9601(9), that is undergoing a remedial investigation and feasibility study, or for which a Record of Decision for remedial action has been issued in accordance with the National Contingency Plan, 40 CFR Part 300.

Co-located Industrial Activities – any industrial activities, excluding your primary industrial activity(ies), located on-site that are defined by the stormwater regulations at 122.26(b)(14)(i)-and (xi). An activity at a facility is not considered co-located if the activity, when considered separately, does not meet the description of a category of industrial activity covered by the stormwater regulations or identified by the SIC code list in Appendix D.

Confidential Business Information (CBI) – see 40 CFR Part 2 for relevant definitions of CBI: http://www.gpo.gov/fdsys/pkg/CFR-2013-title40-vol1/pdf/CFR-2013-title40-vol1-part2-subpartB.pdf.

Control Measures – refers to any stormwater control or other method (including narrative effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the United States.

Corrective Action – for the purposes of the permit, any action taken, or required to be taken, to repair, modify, or replace any stormwater control used at the site; (2) clean up and dispose of spills, releases, or other deposits found on the site; and (3) remedy a permit violation.

Critical Habitat – as defined in the Endangered Species Act at 16 U.S.C. 1531 for a threatened or endangered species, (i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the Endangered Species Act, on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the Endangered Species Act, upon a determination by the Secretary that such areas are essential for the conservation of the species.

Director – a Regional Administrator of the Environmental Protection Agency or an authorized representative. See 40 CFR 122.2.

Discharge – when used without qualification, means the "discharge of a pollutant." See 40 CFR 122.2.

Discharge of a Pollutant – any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. See 40 CFR 122.2.

Discharge Point – for the purposes of this permit, the location where collected and concentrated stormwater flows are discharged from the facility such that the first receiving waterbody into which the discharge flows, either directly or through a separate storm sewer system, is a water of the U.S.

Discharge-Related Activity – activities that cause, contribute to, or result in stormwater and allowable non-stormwater point source discharges, and measures such as the siting, construction and operation of stormwater controls to control, reduce, or prevent pollution in the discharges.

Discharge to an Impaired Water – for the purposes of this permit, a discharge to an impaired water occurs if the first water of the U.S. to which you discharge is identified by a state, tribe, or EPA as not meeting an applicable water quality standard, and requires development of a total maximum daily load (TMDL) (pursuant to Section 303(d) of the Clean Water Act), or is addressed by an EPA-approved or established TMDL, or is not in either of the above categories but the waterbody is covered by pollution control requirements that meet the requirements of 40 CFR 130.7(b)(1). For discharges that enter a separate storm sewer system prior to discharge, the water of the U.S. to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system.

Drought-Stricken Area – for the purposes of this permit, an area in which the National Oceanic and Atmospheric Administration's U.S. Seasonal Drought Outlook indicates for the period that any of the following conditions are likely: (1) "Drought to persist or intensify", (2) "Drought ongoing, some improvement", (3) "Drought likely to improve, impacts ease", or (4) "Drought development likely". See http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.gif.

Effective Operating Condition – for the purposes of this permit, a stormwater control is kept in effective operating condition if it has been implemented and maintained in such a manner that it is working as designed to minimize pollutant discharges.

Effluent Limitations – for the purposes of this permit, any of the Part 2requirements.

Effluent Limitations Guideline (ELG) – defined in 40 CFR § 122.2 as a regulation published by the Administrator under section 304(b) of CWA to adopt or revise effluent limitations.

Eligible – for the purposes of this permit, refers to stormwater and allowable non-stormwater discharges that are authorized for coverage under this general permit.

Endangered Species – defined in the Endangered Species Act at 16 U.S.C. 1531 as any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary to constitute a pest whose protection under the provisions of this Act would present an overwhelming and overriding risk to man.

Existing Discharger – an operator applying for coverage under this permit for discharges authorized previously under an NPDES general or individual permit.

Facility or Activity – any NPDES "point source" (including land or appurtenances thereto) that is subject to regulation under the NPDES program. See 40 CFR 122.2.

Feasible – for the purposes of this permit, feasible means technologically possible and economically practicable and achievable in light of best industry practices. EPA notes that it does not intend for any permit requirement to conflict with state water rights law.

Federal Operator – an entity that meets the definition of "Operator" in this permit and is either any department, agency or instrumentality of the executive, legislative, and judicial branches of the Federal government of the United States, or another entity, such as a private contractor, operating for any such department, agency, or instrumentality.

Green Infrastructure – the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspirate stormwater and reduce flows to sewer systems or to surface waters. See Section 502 of the Federal Water Pollution Control Act (33 U.S.C. 1362).

Hazardous Waste – for the purposes of this permit, any liquid, solid, or contained gas that contain properties that are dangerous or potentially harmful to human health or the environment. See also 40 CFR §261.2.

Hazardous Substance – defined in CERCLA section 101(14) to include: a) any substance designated pursuant to the CWA section 311(b)(2)(A); b) any element, compound, mixture, solution or substance designated pursuant to section 102 of CERCLA; c) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Resource Conservation and Recovery Act (RCRA); d) any toxic pollutant listed under CWA section 307(a); e) any hazardous air pollutant listed under section 112 of the Clean Air Act; and f) any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to section 7 of the Toxic Substances Control Act. See 40 CFR 302.4 for the list of such hazardous substances.

Historic Property – as defined in the National Historic Preservation Act regulations means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

Impaired Water (or "Water Quality Impaired Water" or "Water Quality Limited Segment") – for the purposes of this permit, waters identified by a state, tribe, or EPA as not meeting an applicable water quality standard, and require development of a total maximum daily load (TMDL) (pursuant to Section 303(d) of the CWA), or are addressed by an EPA-approved or established TMDL, or are covered by pollution controls requirements that meet the requirements of 40 FR 130.7(b)(1). For discharges that enter a separate storm sewer system prior to discharge, the first water of the U.S. to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system.

Indian Country or Indian Country Lands – defined at 40 CFR 122.2 as:

1. All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation;

2. All dependent Indian communities within the borders of the United States, whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a State: and

3. All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same. This definition includes all land held in trust for an Indian tribe. (18 U.S.C. 1151)

Infeasible – for the purposes of this permit, infeasible means not technologically possible or not economically practicable and achievable in light of best industry practices. EPA notes that it does not intend for any permit requirement to conflict with state water rights law.

Industrial Activity – the 10 categories of industrial activities included in the definition of "stormwater discharges associated with industrial activity" as defined in 40 CFR 122.26(b)(14)(i)-and (xi).

Industrial Stormwater – stormwater runoff from industrial activity.

Measurable Storm Event – a precipitation event that results in a measurable amount of precipitation (i.e., a storm event that results in an actual discharge) and that follows the preceding storm event by at least 72 hours (3-days). The 72-hour storm interval does not apply if you document that less than a 72-hour interval is representative for local storm events.

Minimize – for the purposes of this permit, minimize means to reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) – defined at 40 CFR §122.26(b)(8) as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

1. Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
2. Designed or used for collecting or conveying stormwater;
3. Which is not a combined sewer; and
4. Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2. See 40 CFR 122.26(b)(4) and (b)(7).

National Pollutant Discharge Elimination System (NPDES) – defined at 40 CFR §122.2 as the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of CWA. The term includes an 'approved program.'

New Discharger – a facility from which there is or may be a discharge, that did not commence the discharge of pollutants at a particular site prior to August 13, 1979, which is not a new source, and which has never received a finally effective NPDES permit for discharges at that site. See 40 CFR 122.2.

New Source – any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced:

- after promulgation of standards of performance under section 306 of the CWA which are applicable to such source, or

- after proposal of standards of performance in accordance with section 306 of the CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal. See 40 CFR 122.2.

New Source Performance Standards (NSPS) – technology-based standards for facilities that qualify as new sources under 40 CFR 122.2 and 40 CFR 122.29.

No Exposure – all industrial materials or activities protected by a storm-resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. See 40 CFR 122.26(g).

Non-Stormwater Discharges – discharges that do not originate from storm events. They can include, but are not limited to, discharges of process water, air conditioner condensate, non-contact cooling water, pavement wash water, external building washdown, irrigation water, or uncontaminated ground water or spring water.

Notice of Intent (NOI) – the form (electronic or paper) required for authorization of coverage under the Multi-Sector General Permit.

Notice of Termination (NOT) – the form (electronic or paper) required for terminating coverage under the Multi-Sector General Permit.

Operator – any entity with a stormwater discharge associated with industrial activity that meets either of the following two criteria:

1. The entity has operational control over industrial activities, including the ability to make modifications to those activities; or
2. The entity has day-to-day operational control of activities at a facility necessary to ensure compliance with the permit (e.g., the entity is authorized to direct workers at a facility to carry out activities required by the permit).

Outfall – see "Discharge Point."

Permitting Authority – for the purposes of this permit, EPA, a Regional Administrator of EPA, or an authorized representative.

Person – an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof. See 40 CFR 122.2.

Point Source – any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff. See 40 CFR 122.2.

Pollutant – defined at 40 CFR §122.2. A partial listing from this definition includes: dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal and agricultural waste discharged into water. See 40 CFR 122.2.

Pollutant of Concern – a pollutant which causes or contributes to a violation of a water quality standard, including a pollutant which is identified as causing an impairment in a state's 303(d) list.

Primary Industrial Activity – includes any activities performed on-site which are (1) identified by the facility's primary SIC code and included in the descriptions of 122.26(b)(14)(ii), (iii), (vi), (viii),

or (xi); or (2) included in the narrative descriptions of 122.26(b)(14)(i), (iv), (v), (vii), or (ix). [For co-located activities covered by multiple SIC codes, it is recommended that the primary industrial determination be based on the value of receipts or revenues or, if such information is not available for a particular facility, the number of employees or production rate for each process may be compared. The operation that generates the most revenue or employs the most personnel is the operation in which the facility is primarily engaged. In situations where the vast majority of on-site activity falls within one SIC code, that activity may be the primary industrial activity.] Narrative descriptions in 40 CFR 122.26(b)(14) identified above include: (i) activities subject to stormwater effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards; (iv) hazardous waste treatment storage, or disposal facilities including those that are operating under interim status or a permit under subtitle C of the Resource Conservation and Recovery Act (RCRA); (v) landfills, land application sites and open dumps that receive or have received industrial wastes; (vii) steam electric power generating facilities; and (ix) sewage treatment works with a design flow of 1.0 mgd or more.

Qualified Personnel – qualified personnel are those who are knowledgeable in the principles and practices of industrial stormwater controls and pollution prevention, and who possess the education and ability to assess conditions at the industrial facility that could impact stormwater quality, and the education and ability to assess the effectiveness of stormwater controls selected and installed to meet the requirements of the permit.

Reportable Quantity Release – a release of a hazardous substance at or above the established legal threshold that requires emergency notification. Refer to 40 CFR Parts 110, 117, and 302 for complete definitions and reportable quantities for which notification is required.

Restricted Information – for the purposes of this permit, information that is privileged or that is otherwise protected from disclosure pursuant to applicable statutes, Executive Orders, or regulations. Such information includes, but is not limited to: classified national security information, protected critical infrastructure information, sensitive security information, and proprietary business information.

Runoff Coefficient – the fraction of total rainfall that will appear at the conveyance as runoff. See 40 CFR 122.26(b)(11).

Run-On – sources of stormwater that drain from land located upslope or upstream from the regulated facility in question.

Saline Water or Saltwater – for the purposes of this permit, a waterbody with salinity that is equal to or exceeds 10 parts per thousand 95 percent or more of the time, unless otherwise defined as a coastal or marine water by the applicable state or tribal surface water quality standards.

Semi-Arid Areas – areas where annual rainfall averages from 10 to 20 inches.

Significant Materials – includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of Title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges. See 40 CFR 122.26(b)(12).

Special Aquatic Sites – sites identified in 40 CFR 230 Subpart E. These are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized

as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region.

Spill – for the purpose of this permit, the release of a hazardous or toxic substance from its container or containment.

Stormwater – stormwater runoff, snow melt runoff, and surface runoff and drainage. See 40 CFR 122.26(b)(13).

Stormwater Controls – see "Control Measures."

Stormwater Discharges Associated with Construction Activity – as used in this permit, a discharge of pollutants in stormwater runoff from areas where land-disturbing activities (e.g., clearing, grading, or excavating) occur, or where construction materials or equipment storage or maintenance (e.g., fill piles, borrow areas, concrete truck washout, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located. See 40 CFR 122.26(b)(14)(x) and 40 CFR 122.26(b)(15).

Stormwater Discharges Associated with Industrial Activity – the discharge from any conveyance that is used for collecting and conveying stormwater and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under Part 122. For the categories of industries identified in this section, the term includes, but is not limited to, stormwater discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at part 401 of this chapter); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater. For the purposes of this paragraph, material handling activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with stormwater drained from the above described areas. Industrial facilities include those that are federally, state, or municipally owned or operated that meet the description of the facilities listed in 40 CFR 122.26(b)(14). The term also includes those facilities designated under the provisions of 40 CFR 122.26(a)(1)(v). See 40 CFR 122.26(b)(14).

Stormwater Pollution Prevention Team – the stormwater pollution prevention team is responsible for overseeing development of the SWPPP, any modifications to it, and for implementing and maintaining stormwater control measures and taking corrective actions when required. Each member of the stormwater pollution prevention team must have ready access to either an electronic or paper copy of applicable portions of this permit, the most updated copy of your SWPPP, and other relevant documents or information that must be kept with the SWPPP. The individuals on the "Stormwater Team" must be identified in the SWPPP.

Storm Event – a precipitation event that results in a measurable amount of precipitation.

Threatened Species – defined in the Endangered Species Act at 16 U.S.C. 1531 as any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Tier 2 Waters – for antidegradation purposes, pursuant to 40 CFR 131.12(a)(2), Tier 2 waters are characterized as having water quality that exceeds the levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water.

Tier 2.5 Waters – for antidegradation purposes, Tier 2.5 waters are those waters designated by States or Tribes as requiring a level of protection equal to and above that given to Tier 2 waters, but less than that given Tier 3 waters. States have special requirements for these waters.

Tier 3 Waters – for antidegradation purposes, pursuant to 40 CFR 131.12(a)(3), Tier 3 waters are identified by states as having high quality waters constituting an Outstanding National Resource Water (ONRW), such as waters of National Parks and State Parks, wildlife refuges, and waters of exceptional recreational or ecological significance.

Total Maximum Daily Loads (TMDLs) – the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. If receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. (See section 303(d) of the Clean Water Act and 40 CFR 130.2 and 130.7).

Toxic Waste – see "Hazardous Materials."

Uncontaminated Discharge – a discharge that does not cause or contribute to an exceedance of applicable water quality standards.

Upset – upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. See 40 CFR 122.41(n)(1).

Water Quality Impaired – see "Impaired Water."

Water Quality Standards – defined in 40 CFR § 131.3, and are provisions of State or Federal law which consist of a designated use or uses for the waters of the United States, water quality criteria for such waters based upon such uses, and an antidegradation policy to protect high-quality waters. Water quality standards protect the public health or welfare, enhance the quality of water and serve the purposes of the Act.

Waters of the United States – see definition at 40 CFR §122.2.

A.2. ABBREVIATIONS AND ACRONYMS

AIM – Advanced Implementation Measures

BAT – Best Available Technology Economically Achievable

BOD5 – Biochemical Oxygen Demand (5-day test)

BMP – Best Management Practice

BPJ – Best Professional Judgment

CERCLA – Comprehensive Environmental Response, Compensation and Liability Act

CGP – Construction General Permit

CFR – Code of Federal Regulations

COD – Chemical Oxygen Demand

CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 *et seq*)

CWT – Centralized Waste Treatment

DMR – Discharge Monitoring Report

ELG – Effluent Limitations Guideline

EPA – U. S. Environmental Protection Agency

ESA – Endangered Species Act

FWS – U. S. Fish and Wildlife Service

LA – Load Allocations

MGD – Million Gallons per Day

MOS – Margin of Safety

MS4 – Municipal Separate Storm Sewer System

MSGP – Multi-Sector General Permit

NAICS – North American Industry Classification System

NEPA – National Environmental Policy Act

NET – NPDES eReporting Tool

NHPA – National Historic Preservation Act

NMFS – U. S. National Marine Fisheries Service

NOI – Notice of Intent

NOE – No Exposure

NOT – Notice of Termination

NPDES – National Pollutant Discharge Elimination System

NRC – National Response Center

NRHP – National Register of Historic Places

NSPS – New Source Performance Standard

NTU – Nephelometric Turbidity Unit

OMB – U. S. Office of Management and Budget

ORW – Outstanding Resource Water

OSM – U. S. Office of Surface Mining

POTW – Publicly Owned Treatment Works

RCRA – Resource Conservation and Recovery Act

RQ – Reportable Quantity

SARA – Superfund Amendments and Reauthorization Act

SDS – Safety Data Sheet

SHPO – State Historic Preservation Officer

SIC – Standard Industrial Classification

SMCRA – Surface Mining Control and Reclamation Act

SPCC – Spill Prevention, Control, and Countermeasures

SWPPP – Stormwater Pollution Prevention Plan

THPO – Tribal Historic Preservation Officer

TMDL – Total Maximum Daily Load

TSDF – Treatment, Storage, or Disposal Facility

TSS – Total Suspended Solids

USGS – United States Geological Survey

WLA – Wasteload Allocation

WQS – Water Quality Standard

Appendix B - Standard Permit Conditions

Standard permit conditions in Appendix B are consistent with the general permit provisions required under 40 CFR 122.41.

B.1. Duty To Comply.

You must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

A. You must comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards, even if the permit has not yet been modified to incorporate the requirement.

B. Penalties for Violations of Permit Conditions: EPA and other federal agencies are required to adjust their maximum and minimum statutory civil penalty amounts through rulemaking by January 15 each year to account for inflation. EPA's annual rulemaking adjustments, codified in 40 C.F.R. § 19.4, are mandated by the Federal Civil Penalties Inflation Adjustment Act of 1990, as amended through the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (28 U.S.C. § 2461 note). As such, the civil penalty amounts below may change in the future due to inflation. See 40 C.F.R. § 19.4 for the most up-to-date civil penalty amounts.

1. Criminal Penalties.

1.1. Negligent Violations. The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than $2,500 nor more than $25,000 per day of violation, or imprisonment of not more than one year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation or by imprisonment of not more than two years, or both.

1.2. *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

1.3. *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than $250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision be subject to a fine of not more than $1,000,000 and can fined up to $2,000,000 for second or subsequent convictions.

1.4. *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

2. *Civil Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act and the Federal Civil Penalties Inflation Adjustment Act of 1990, as amended by Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (28 U.S.C. § 2461 note), and codified at 40 CFR § 19.4.

3. *Administrative Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty, as follows

3.1 *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act and the Federal Civil Penalties Inflation Adjustment Act of 1990 as amended by the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (28 U.S.C. § 2461 note), and codified at 40 CFR § 19.4.

3.2 *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act and the Federal Civil Penalties Inflation Adjustment Act of 1990, as amended by the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (28 U.S.C. § 2461 note), and codified at 40 CFR § 19.4.

B.2. Duty to Reapply.

If you wish to continue an activity regulated by this permit after the expiration date of this permit, you must apply for and obtain authorization as required by the new permit once EPA issues it.

B.3. Need to Halt or Reduce Activity Not a Defense.

It shall not be a defense for you in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

B.4. Duty to Mitigate.

You must take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

B.5. Proper Operation and Maintenance.

You must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by you to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by you only when the operation is necessary to achieve compliance with the conditions of this permit.

B.6. Permit Actions.

This permit may be modified, revoked and reissued, or terminated for cause. Your filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

B.7. Property Rights.

This permit does not convey any property rights of any sort, or any exclusive privileges.

B.8. Duty to Provide Information.

You must furnish to EPA or an authorized representative (including an authorized contractor acting as a representative of EPA), within a reasonable time, any information which EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. You must also furnish to EPA or an authorized representative upon request, copies of records required to be kept by this permit.

B.9. Inspection and Entry.

You must allow EPA or an authorized representative (including an authorized contractor acting as a representative of EPA), upon presentation of credentials and other documents as may be required by law, to:

A. Enter upon your premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

D. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

B.10. Monitoring and Records.

A. Samples and measurements taken for the purpose of monitoring must be representative of the volume and nature of the monitored activity.

B. You must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date the permit expires or the date the permittee's authorization is terminated. This period may be extended by request of EPA at any time.

C. Records of monitoring information must include:

1. The date, exact place, and time of sampling or measurements;
2. The individual(s) who performed the sampling or measurements;
3. The date(s) analyses were performed
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

D. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the permit.

E. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

B.11. Signatory Requirements.

A. NOIs, NOTs, and NOEs must be signed as follows:

1. For a corporation: By a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
2. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or
3. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

B. Your SWPPP, including changes to your SWPPP to document any corrective actions or advanced implementation measures taken as required by Part 5, and any other compliance documentation required under this permit, including the Annual Report, DMRs, and inspection reports, must be signed by a person described in Appendix B, Subsection 11.A above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described in Appendix B, Subsection 11.A;

2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

3. The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

C. All other changes to your SWPPP, and other compliance documentation required under Part 5.3, must be signed and dated by the person preparing the change or documentation.

D. Changes to Authorization. If an authorization under this permit is no longer accurate because the industrial facility has been purchased by a different entity, a new NOI satisfying the requirements of Part 1.3 must be submitted to EPA. See Table 1-2 in Part 1.3.3 of the permit. However, if the only change that is occurring is a change in contact information or a change in the facility's address, the operator need only make a modification to the existing NOI submitted for authorization.

E. Any person signing documents in accordance with Appendix B, Subsections 11.A or 11.B above must include the following certification:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

F. For persons signing documents electronically, in addition to meeting other applicable requirements in Appendix I, Subsection B.11, such signatures must be legally dependable with no less evidentiary value than their paper equivalent.

G. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

B.12. Reporting Requirements.

A. Planned changes. You must give notice to EPA as soon as possible, but no fewer than 30 days, of any planned physical alterations or additions to the permitted facility. Notice is required only when:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1).

B. Anticipated noncompliance. You must give advance notice to EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Transfers. This permit is not transferable to any person except after notice to EPA. Where a facility wants to change the name of the permittee, the original permittee (the first owner or operators) must submit a Notice of Termination pursuant to Part 1.4. The new owner or operator must submit a Notice of Intent in accordance with Part 1.3.3 and Table 1-2. See also requirements in Appendix B, Subsections 11.B and 11.D.

D. Monitoring reports. Monitoring results must be reported at the intervals specified elsewhere in this permit.

1. Pursuant to Part 7.1, all monitoring data collected pursuant to Part 4 must be submitted to EPA using EPA's online DMR system (http://www.epa.gov/netdmr/).

2. If you monitor any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or as specified in the permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the DMR.

3. Calculations for all limitations which require averaging of measurements must use an arithmetic mean. For averaging purposes, use a value of zero for any individual sample parameter, which is determined to be less than the method detection limit. For sample values that fall between the method detection level and the quantitation limit (i.e., a confirmed detection but below the level that can be reliably quantified), use a value halfway between zero and the quantitation limit.

E. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

F. Twenty-four hour reporting.

1. You must report any noncompliance which may endanger health or the environment. Any information must be provided orally within 24 hours from the time you become aware of the circumstances. A written submission must also be provided within five days of the time you become aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

2. The following shall be included as information which must be reported within 24 hours under this paragraph.

a. Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR 122.41(m)(3)(ii))

b. Any upset which exceeds any effluent limitation in the permit

c. Violation of a maximum daily discharge limit for any numeric effluent limitation. (See 40 CFR 122.44(g).)

3. EPA may waive the written report on a case-by-case basis for reports under Appendix B, Subsection 12.F.2 if the oral report has been received within 24 hours.

G. Other noncompliance. You must report all instances of noncompliance not reported under Appendix B, Subsections 12.D, 12.E, and 12.F, at the time monitoring reports are submitted. The reports must contain the information listed in Appendix B, Subsection 12.F.

H. Other information. Where you become aware that you failed to submit any relevant facts in your NOI, or submitted incorrect information in your NOI or in any report to the Permitting Authority, you must promptly submit such facts or information.

B.13. Bypass.

A. Definitions.

1. Bypass means the intentional diversion of waste streams from any portion of a treatment facility See 40 CFR 122.41(m)(1)(i).

2. Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. See 40 CFR 122.41(m)(1)(ii).

B. Bypass not exceeding limitations. You may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Appendix B, Subsections 13.C and 13.D. See 40 CFR 122.41(m)(2).

C. Notice.

1. Anticipated bypass. If you know in advance of the need for a bypass, you must submit prior notice, if possible at least ten days before the date of the bypass. See 40 CFR 122.41(m)(3)(i).

2. Unanticipated bypass. You must submit notice of an unanticipated bypass as required in Appendix B, Subsection 12.F (24-hour notice). See 40 CFR 122.41(m)(3)(ii).

D. Prohibition of bypass. See 40 CFR 122.41(m)(4).

1. Bypass is prohibited, and EPA may take enforcement action against you for bypass, unless:

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. You submitted notices as required under Appendix B, Subsection 13.C.

2. EPA may approve an anticipated bypass, after considering its adverse effects, if EPA determines that it will meet the three conditions listed above in Appendix B, Subsection 13.D.1.

B.14. Upset.

A. Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. See 40 CFR 122.41(n)(1).

B. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Appendix B, Subsection 14.C are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. See 40 CFR 122.41(n)(2).

C. Conditions necessary for a demonstration of upset. See 40 CFR 122.41(n)(3). A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that you can identify the cause(s) of the upset;
2. The permitted facility was at the time being properly operated; and
3. You submitted notice of the upset as required in Appendix B, Subsection 12.F.2.b (24 hour notice).
4. You complied with any remedial measures required under Appendix B, Subsection 4.

D. Burden of proof. In any enforcement proceeding, you, as the one seeking to establish the occurrence of an upset, have the burden of proof. See 40 CFR 122.41(n)(4).

B.15. Retention of Records.

Copies of the SWPPP and all documentation required by this permit, including records of all data used to complete the NOI to be covered by this permit, must be retained for at least three years from the date that permit coverage expires or is terminated. This period may be extended by request of EPA at any time.

B.16. Reopener Clause.

A. Procedures for modification or revocation. Permit modification or revocation will be conducted according to 40 CFR §122.62, §122.63, §122.64 and §124.5. This includes reasons such as new information which was not available at the time of permit issuance and would have justified the application of different permit conditions at the time of issuance, including but not limited to any Reasonable and Prudent Alternatives or Reasonable and Prudent Measures developed in Endangered Species Act consultation, and/or future monitoring results.

B. Water quality protection. If there is evidence indicating that the stormwater discharges authorized by this permit cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, you may be required to obtain an individual permit, or the permit may be modified to include different limitations and/or requirements.

C. Timing of permit modification. EPA may elect to modify the permit prior to its expiration (rather than waiting for the new permit cycle) to comply with any new statutory or regulatory requirements, such as for effluent limitation guidelines that may be promulgated in the course of the current permit cycle.

Appendix C - Areas Eligible for Permit Coverage

EPA can only provide permit coverage in these areas and for classes of discharges that are outside the scope of a state's NPDES program authorization.

C.1 EPA Region 1: Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont.

This permit offers NPDES permit coverage for stormwater discharges associated with industrial activity from the following areas in EPA Region 1:

Master Permit Number	Areas of Coverage/Where EPA Is Permitting Authority
CTR05I000	Indian Country within the State of Connecticut
MAR050000	Commonwealth of Massachusetts, except Indian country
MAR05I000	Indian country within the Commonwealth of Massachusetts
NHR050000	State of New Hampshire
RIR05I000	Indian country within the State of Rhode Island
VTR05F000	Areas in the State of Vermont subject to industrial activity by a Federal Operator

For stormwater discharges in EPA Region 1 outside the areas of coverage identified above, please contact your state NPDES permitting authority to obtain coverage under a state-issued NPDES permit.

C.2 EPA Region 2: New Jersey, New York, Puerto Rico, Virgin Islands.

This permit offers NPDES permit coverage for stormwater discharges associated with industrial activity from the following areas in EPA Region 2:

Master Permit Number	Areas of Coverage/Where EPA Is Permitting Authority
PRR050000	Commonwealth of Puerto Rico
NYR05I000	Indian country within the State of New York, except the lands of the St. Regis Mohawk Tribe

For stormwater discharges in EPA Region 2 outside the areas of coverage identified above, please contact your state NPDES permitting authority to obtain coverage under a state-issued NPDES permit.

C.3 EPA Region 3: Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia.

This permit offers NPDES permit coverage for stormwater discharges associated with industrial activity from the following areas in EPA Region 3:

Master Permit Number	Areas of Coverage/Where EPA Is Permitting Authority
DCR050000	District of Columbia
DER05F000	Areas in the State of Delaware subject to industrial activity by a Federal Operator
VAR05I000	Indian country within the State of Virginia

For stormwater discharges in EPA Region 3 outside the areas of coverage identified above, please contact your state NPDES permitting authority to obtain coverage under a state-issued NPDES permit.

C.4 EPA Region 4: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee.

This permit offers NPDES permit coverage for stormwater discharges associated with industrial activity from the following areas in EPA Region 4:

Master Permit Number	Areas of Coverage/Where EPA Is Permitting Authority
ALR05I000	Indian country within the State of Alabama
FLR05I000	Indian country within the State of Florida (except for facilities on the Miccosukee and Seminole Tribe lands, contact EPA Region 4 for an individual permit application)
MSR05I000	Indian country within the State of Mississippi
NCR05I000	Indian country within the State of North Carolina
SCR05I000	Indian country within the State of South Carolina

For stormwater discharges in EPA Region 4 outside the areas of coverage identified above, please contact your state NPDES permitting authority to obtain coverage under a state-issued NPDES permit.

C.5 EPA Region 5: Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin.

This permit offers NPDES permit coverage for stormwater discharges associated with industrial activity from the following areas in EPA Region 5:

Master Permit Number	Areas of Coverage/Where EPA Is Permitting Authority
MIR05I000	Indian country within the State of Michigan
MNR05I000	Indian country within the State of Minnesota
WIR05I000	Indian country within the State of Wisconsin (except for facilities on Sokaogon Chippewa Community lands and Bad River Band of Lake Superior Tribe of Chippewa Indians lands, see EPA Region 5 for an individual permit application).

For stormwater discharges in EPA Region 5 outside the areas of coverage identified above, please contact your state NPDES permitting authority to obtain coverage under a state-issued NPDES permit.

C.6 EPA Region 6: Arkansas, Louisiana, Oklahoma, Texas, and New Mexico (except see Region 9 for Navajo lands, and see Region 8 for Ute Mountain Reservation lands).

This permit offers NPDES permit coverage for stormwater discharges associated with industrial activity from the following areas in EPA Region 6:

Master Permit Number	Areas of Coverage/Where EPA Is Permitting Authority
LAR05I000	Indian country within the State of Louisiana
NMR050000	The State of New Mexico, except Indian country

Master Permit Number	Areas of Coverage/Where EPA Is Permitting Authority
NMR05I000	Indian country within the State of New Mexico, except Ute Mountain Reservation lands that are covered under Colorado permit COR05I000 and Navajo Reservation lands that are covered under Arizona permit AZR05I000
OKR05I000	Indian country within the State of Oklahoma
OKR05F000	Facilities in the State of Oklahoma not under the jurisdiction of the Oklahoma Department of Environmental Quality or the Oklahoma Department of Agriculture, Food and Forestry, except those on Indian Country. EPA jurisdiction facilities include SIC Codes 1311, 1381, 1382, 1389, and 5171.
TXR05F000	Facilities in the State of Texas not under the jurisdiction of the Texas Commission on Environmental Quality, except those on Indian Country. EPA-jurisdiction facilities include SIC Codes 1311, 1321, 1381, 1382, 1389, and 5171 (other than oil field service company "home base" facilities).
TXR05I000	Indian country within the State of Texas

For stormwater discharges in EPA Region 6 outside the areas of coverage identified above, please contact your state NPDES permitting authority to obtain coverage under a state-issued NPDES permit.

C.7 EPA Region 7: Iowa, Kansas, Missouri, Nebraska (except see Region 8 for Pine Ridge Reservation Lands).

This permit offer NPDES permit coverage for stormwater discharges associated with industrial activity from the following areas in EPA Region 7:

Master Permit Number	Areas of Coverage/Where EPA Is Permitting Authority
IAR05I000	Indian country within the State of Iowa
KSR05I000	Indian country within the State of Kansas
NER05I000	Indian country within the State of Nebraska, except Pine Ridge Reservation lands (see Region 8)

For stormwater discharges in EPA Region 7 outside the areas of coverage identified above, please contact your state NPDES permitting authority to obtain coverage under a state-issued NPDES permit.

C.8 EPA Region 8: Colorado, Montana, North Dakota, South Dakota, Wyoming, Utah (except see Region 9 for Goshute Reservation and Navajo Reservation Lands), the Ute Mountain Reservation in NM, and the Pine Ridge Reservation in NE.

This permit offers NPDES permit coverage for stormwater discharges associated with industrial activity from the following areas in EPA Region 8:

Master Permit Number	Areas of Coverage/Where EPA Is Permitting Authority
COR05F000	Areas in the State of Colorado, except those located on Indian country, subject to industrial activity by a Federal Operator

Master Permit Number	Areas of Coverage/Where EPA Is Permitting Authority
COR05I000	Indian country within the State of Colorado, as well as the portion of the Ute Mountain Reservation located in New Mexico
MTR05I000	Indian country within the State of Montana
NDR05I000	Indian country within the State of North Dakota, as well as that portion of the Standing Rock Reservation located in South Dakota (except for the portion of the lands within the former boundaries of the Lake Traverse Reservation, which is covered under South Dakota permit SDR05I000 listed below)
SDR05I000	Indian country within the State of South Dakota, as well as the portion of the Pine Ridge Reservation located in Nebraska and the portion of the lands within the former boundaries of the Lake Traverse Reservation located in North Dakota (except for the Standing Rock Reservation, which is covered under North Dakota permit NDR05I000 listed above)
UTR05I000	Indian country within the State of Utah, except Goshute and Navajo Reservation lands (see Region 9)
WYR05I000	Indian country within the State of Wyoming

For stormwater discharges in EPA Region 8 outside the areas of coverage identified above, please contact your state NPDES permitting authority to obtain coverage under a state-issued NPDES permit.

C.9 EPA Region 9: California, Hawaii, Nevada, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Confederated Tribes of the Goshute Reservation in Utah and Nevada, Indian Country within the State of Arizona including the Navajo Reservation in Utah and New Mexico and Arizona, the Duck Valley Reservation in Idaho, and the Fort McDermitt Reservation in Oregon.

This permit offers NPDES permit coverage for stormwater discharges associated with industrial activity from the following areas in EPA Region 9:

Master Permit Number	Areas of Coverage/Where EPA Is Permitting Authority
ASR050000	American Samoa
AZR05I000	Indian country within the State of Arizona, including Navajo Reservation lands in New Mexico and Utah
CAR05I000	Indian country within the State of California (facilities on the Hoopa Valley Reservation must contact EPA Region 9 for an individual permit)
GUR050000	Island of Guam
JAR050000	Johnston Atoll
MWR050000	Midway Island and Wake Island
MPR050000	Commonwealth of the Northern Mariana Islands
NVR05I000	Indian country within the State of Nevada, including the Duck Valley Reservation in Idaho, the Fort McDermitt Reservation in Oregon and the Confederated Tribes of the Goshute Reservation in Utah

For stormwater discharges in EPA Region 9 outside the areas of coverage identified above, please contact your state NPDES permitting authority to obtain coverage under a state-issued NPDES permit.

C.10 Region 10: Alaska, Idaho (except see Region 9 for Duck Valley Reservation lands), Oregon (except see Region 9 for Fort McDermitt Reservation), Washington.

This permit offers NPDES permit coverage for stormwater discharges associated with industrial activity from the following areas in EPA Region 10:

Master Permit Number	Areas of Coverage/Where EPA Is Permitting Authority
AKR05F000	Denali National Park and Preserve
AKR05I000	Indian country lands as defined in 18 U.S.C. 1151 within the State of Alaska
IDR050000	The State of Idaho, except Indian country lands
IDR05I000	Indian country lands within the State of Idaho, except Duck Valley Reservation lands, which are covered under Nevada permit NVR05I000
ORR05I000	Indian country lands within the State of Oregon, except Fort McDermitt Reservation lands, which are covered under Nevada permit NVR05I000
WAR05I000	Indian country lands within the State of Washington (facilities on the Swinomish Reservation must contact EPA Region 10 for an individual permit)
WAR05F000	Areas in the State of Washington, except those located on Indian country lands, subject to industrial activity by a Federal Operator

For stormwater discharges in EPA Region 10 outside the areas of coverage identified above, please contact your state NPDES permitting authority to obtain coverage under a state-issued NPDES permit.

Appendix D - Facilities and Activities Covered

Your permit eligibility is limited to discharges from facilities in the "sectors" of industrial activity summarized in Table D-1. These sector descriptions are based on Standard Industrial Classification (SIC) Codes and Industrial Activity Codes. References to "sectors" in this permit (e.g., sector-specific monitoring requirements) refer to these groupings.

Table D-1. Sectors of Industrial Activity Covered by This Permit		
Subsector (May be subject to more than one)	**SIC Code or Activity Code[1]**	**Activity Represented**
SECTOR A: TIMBER PRODUCTS		
A1	2421	General Sawmills and Planing Mills
A2	2491	Wood Preserving
A3	2411	Log Storage and Handling
A4	2426	Hardwood Dimension and Flooring Mills
	2429	Special Product Sawmills, Not Elsewhere Classified
	2431-2439 (except 2434)	Millwork, Veneer, Plywood, and Structural Wood (see Sector W)
	2448	Wood Pallets and Skids
	2449	Wood Containers, Not Elsewhere Classified
	2451, 2452	Wood Buildings and Mobile Homes
	2493	Reconstituted Wood Products
	2499	Wood Products, Not Elsewhere Classified
	2441	Nailed and Lock Corner Wood Boxes and Shook
SECTOR B: PAPER AND ALLIED PRODUCTS		
B1	2631	Paperboard Mills
B2	2611	Pulp Mills
	2621	Paper Mills
	2652-2657	Paperboard Containers and Boxes
	2671-2679	Converted Paper and Paperboard Products, Except Containers and Boxes
SECTOR C: CHEMICALS AND ALLIED PRODUCTS		
C1	2873-2879	Agricultural Chemicals
C2	2812-2819	Industrial Inorganic Chemicals
C3	2841-2844	Soaps, Detergents, and Cleaning Preparations; Perfumes, Cosmetics, and Other Toilet Preparations
C4	2821-2824	Plastics Materials and Synthetic Resins, Synthetic Rubber, Cellulosic and Other Manmade Fibers Except Glass

Table D-1. Sectors of Industrial Activity Covered by This Permit		
Subsector (May be subject to more than one)	**SIC Code or Activity Code[1]**	**Activity Represented**
C5	2833-2836	Medicinal Chemicals and Botanical Products; Pharmaceutical Preparations; in vitro and in vivo Diagnostic Substances; and Biological Products, Except Diagnostic Substances
	2851	Paints, Varnishes, Lacquers, Enamels, and Allied Products
	2861-2869	Industrial Organic Chemicals
	2891-2899	Miscellaneous Chemical Products
	3952 (limited to list of inks and paints)	Inks and Paints, Including China Painting Enamels, India Ink, Drawing Ink, Platinum Paints for Burnt Wood or Leather Work, Paints for China Painting, Artist's Paints and Artist's Watercolors
	2911	Petroleum Refining
SECTOR D: ASPHALT PAVING AND ROOFING MATERIALS AND LUBRICANTS		
D1	2951, 2952	Asphalt Paving and Roofing Materials
D2	2992, 2999	Miscellaneous Products of Petroleum and Coal
SECTOR E: GLASS, CLAY, CEMENT, CONCRETE, AND GYPSUM PRODUCTS		
E1	3251-3259	Structural Clay Products
	3261-3269	Pottery and Related Products
E2	3271-3275	Concrete, Gypsum, and Plaster Products
E3	3211	Flat Glass
	3221, 3229	Glass and Glassware, Pressed or Blown
	3231	Glass Products Made of Purchased Glass
	3241	Hydraulic Cement
	3281	Cut Stone and Stone Products
	3291-3299	Abrasive, Asbestos, and Miscellaneous Nonmetallic Mineral Products
SECTOR F: PRIMARY METALS		
F1	3312-3317	Steel Works, Blast Furnaces, and Rolling and Finishing Mills
F2	3321-3325	Iron and Steel Foundries
F3	3351-3357	Rolling, Drawing, and Extruding of Nonferrous Metals
F4	3363-3369	Nonferrous Foundries (Castings)
F5	3331-3339	Primary Smelting and Refining of Nonferrous Metals
	3341	Secondary Smelting and Refining of Nonferrous Metals
	3398, 3399	Miscellaneous Primary Metal Products

Table D-1. Sectors of Industrial Activity Covered by This Permit		
Subsector (May be subject to more than one)	**SIC Code or Activity Code[1]**	**Activity Represented**
SECTOR G: METAL MINING (ORE MINING AND DRESSING)		
G1	1021	Copper Ore and Mining Dressing Facilities
G2	1011	Iron Ores
	1021	Copper Ores
	1031	Lead and Zinc Ores
	1041, 1044	Gold and Silver Ores
	1061	Ferroalloy Ores, Except Vanadium
	1081	Metal Mining Services
	1094, 1099	Miscellaneous Metal Ores
SECTOR H: COAL MINES AND COAL MINING-RELATED FACILITIES		
H1	1221-1241	Coal Mines and Coal Mining-Related Facilities
SECTOR I: OIL AND GAS EXTRACTION		
I1	1311	Crude Petroleum and Natural Gas
	1321	Natural Gas Liquids
	1381-1389	Oil and Gas Field Services
SECTOR J: MINERAL MINING AND DRESSING		
J1	1442	Construction Sand and Gravel
	1446	Industrial Sand
J2	1411	Dimension Stone
	1422-1429	Crushed and Broken Stone, Including Rip Rap
	1481	Nonmetallic Minerals Services, Except Fuels
	1499	Miscellaneous Nonmetallic Minerals, Except Fuels
J3	1455, 1459	Clay, Ceramic, and Refractory Materials
	1474-1479	Chemical and Fertilizer Mineral Mining
SECTOR K: HAZARDOUS WASTE TREATMENT, STORAGE, OR DISPOSAL FACILITIES		
K1	HZ	Hazardous Waste Treatment, Storage, or Disposal Facilities, including those that are operating under interim status or a permit under subtitle C of RCRA
SECTOR L: LANDFILLS, LAND APPLICATION SITES, AND OPEN DUMPS		
L1	LF	All Landfill, Land Application Sites and Open Dumps
L2	LF	All Landfill, Land Application Sites and Open Dumps, except Municipal Solid Waste Landfill (MSWLF) Areas Closed in Accordance with 40 CFR 258.60
SECTOR M: AUTOMOBILE SALVAGE YARDS		
M1	5015	Automobile Salvage Yards

Table D-1. Sectors of Industrial Activity Covered by This Permit		
Subsector (May be subject to more than one)	**SIC Code or Activity Code[1]**	**Activity Represented**
SECTOR N: SCRAP RECYCLING FACILITIES		
N1	5093	Scrap Recycling and Waste Recycling Facilities except Source-Separated Recycling
N2	5093	Source-separated Recycling Facility
SECTOR O: STEAM ELECTRIC GENERATING FACILITIES		
O1	SE	Steam Electric Generating Facilities, including coal handling sites
SECTOR P: LAND TRANSPORTATION AND WAREHOUSING		
P1	4011, 4013	Railroad Transportation
	4111-4173	Local and Highway Passenger Transportation
	4212-4231	Motor Freight Transportation and Warehousing
	4311	United States Postal Service
	5171	Petroleum Bulk Stations and Terminals
SECTOR Q: WATER TRANSPORTATION		
Q1	4412-4499	Water Transportation Facilities
SECTOR R: SHIP AND BOAT BUILDING AND REPAIRING YARDS		
R1	3731, 3732	Ship and Boat Building or Repairing Yards
SECTOR S: AIR TRANSPORTATION FACILITIES		
S1	4512-4581	Air Transportation Facilities
SECTOR T: TREATMENT WORKS		
T1	TW	Treatment Works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR Part 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the CWA
SECTOR U: FOOD AND KINDRED PRODUCTS		
U1	2041-2048	Grain Mill Products
U2	2074-2079	Fats and Oils Products
U3	2011-2015	Meat Products
	2021-2026	Dairy Products

Table D-1. Sectors of Industrial Activity Covered by This Permit		
Subsector (May be subject to more than one)	**SIC Code or Activity Code[1]**	**Activity Represented**
	2032-2038	Canned, Frozen, and Preserved Fruits, Vegetables, and Food Specialties
	2051-2053	Bakery Products
	2061-2068	Sugar and Confectionery Products
	2082-2087	Beverages
	2091-2099	Miscellaneous Food Preparations and Kindred Products
	2111-2141	Tobacco Products
SECTOR V: TEXTILE MILLS, APPAREL, AND OTHER FABRIC PRODUCT MANUFACTURING; LEATHER AND LEATHER PRODUCTS		
V1	2211-2299	Textile Mill Products
	2311-2399	Apparel and Other Finished Products Made from Fabrics and Similar Materials
	3131-3199	Leather and Leather Products (note: see Sector Z1 for Leather Tanning and Finishing)
SECTOR W: FURNITURE AND FIXTURES		
W1	2434	Wood Kitchen Cabinets
	2511-2599	Furniture and Fixtures
SECTOR X: PRINTING AND PUBLISHING		
X1	2711-2796	Printing, Publishing, and Allied Industries
SECTOR Y: RUBBER, MISCELLANEOUS PLASTIC PRODUCTS, AND MISCELLANEOUS MANUFACTURING INDUSTRIES		
Y1	3011	Tires and Inner Tubes
	3021	Rubber and Plastics Footwear
	3052, 3053	Gaskets, Packing and Sealing Devices, and Rubber and Plastic Hoses and Belting
	3061, 3069	Fabricated Rubber Products, Not Elsewhere Classified
Y2	3081-3089	Miscellaneous Plastics Products
	3931	Musical Instruments
	3942-3949	Dolls, Toys, Games, and Sporting and Athletic Goods
	3951-3955 (except 3952 – see Sector C)	Pens, Pencils, and Other Artists' Materials
	3961, 3965	Costume Jewelry, Costume Novelties, Buttons, and Miscellaneous Notions, Except Precious Metal
	3991-3999	Miscellaneous Manufacturing Industries

Table D-1. Sectors of Industrial Activity Covered by This Permit		
Subsector (May be subject to more than one)	**SIC Code or Activity Code[1]**	**Activity Represented**
SECTOR Z: LEATHER TANNING AND FINISHING		
Z1	3111	Leather Tanning and Finishing
SECTOR AA: FABRICATED METAL PRODUCTS		
AA1	3411-3499 (except 3479)	Fabricated Metal Products, Except Machinery and Transportation Equipment, and Coating, Engraving, and Allied Services
	3911-3915	Jewelry, Silverware, and Plated Ware
AA2	3479	Fabricated Metal Coating and Engraving
SECTOR AB: TRANSPORTATION EQUIPMENT, INDUSTRIAL OR COMMERCIAL MACHINERY		
AB1	3511-3599 (except 3571-3579)	Industrial and Commercial Machinery, Except Computer and Office Equipment (see Sector AC)
	3711-3799 (except 3731, 3732)	Transportation Equipment Except Ship and Boat Building and Repairing (see Sector R)
SECTOR AC: ELECTRONIC, ELECTRICAL, PHOTOGRAPHIC, AND OPTICAL GOODS		
AC1	3571-3579	Computer and Office Equipment
	3812-3873	Measuring, Analyzing, and Controlling Instruments; Photographic and Optical Goods, Watches, and Clocks
	3612-3699	Electronic and Electrical Equipment and Components, Except Computer Equipment
SECTOR AD: NON-CLASSIFIED FACILITIES		
AD1	Other stormwater discharges designated by the Director as needing a permit (see 40 CFR 122.26(a)(9)(i)(C) & (D)) or any facility discharging stormwater associated with industrial activity not described by any of Sectors A-AC. NOTE: Facilities may not elect to be covered under Sector AD. Only the Director may assign a facility to Sector AD.	

[1] A complete list of SIC Codes (and conversions from the newer North American Industry Classification System" (NAICS)) can be obtained from the Internet at www.census.gov/epcd/www/naics.html or in paper form from various locations in the document titled *Handbook of Standard Industrial Classifications*, Office of Management and Budget, 1987.

Appendix E - Procedures Relating to Endangered Species Protection

E.1 Assessing the Effects of Your Discharges and Discharge-Related Activities

In accordance with Part 1.1.4, you must follow the procedures in this appendix to determine which of the eligibility criteria (i.e., criterion A - E) you qualify under, if any, with respect to the protection of threatened or endangered species listed, and "critical habitat" designated, under the federal Endangered Species Act (ESA). If you do not meet one of these criteria, you are not eligible for coverage under this permit.

The procedures in this appendix will help you assess the potential effects of applicable stormwater discharges, discharge-related activities, and authorized non-stormwater discharges on federally listed threatened and endangered species and their designated critical habitat. In accordance with Part 6.2.6.1 of this permit, you must keep any documentation that supports your eligibility criteria determination, including the completed *Criterion Selection Worksheet* in Part E.4 of this appendix, with your Stormwater Pollution Prevention Plan (SWPPP).

You must complete your eligibility determination outlined in the Endangered Species Protection section of the Notice of Intent (NOI) in the NPDES eReporting Tool (NeT-MSGP) and provide all information as required on your NOI that supports the Part 1.1.4 eligibility criterion you qualify under. Note that if you have determined that you may be eligible under Criterion C3 or Criterion F, you must complete additional questions in the Endangered Species Protection section of the NOI in NeT-MSGP, unless the EPA Regional Office grants you a waiver from electronic reporting, in which case you must submit a completed *Criterion C3 Eligibility Form* to EPA a minimum of 30 days prior to submitting your NOI for permit coverage.

While coordination between you and the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS)(together, the "Services") is not necessarily required in all cases, EPA encourages you to coordinate with the Services, to document that coordination, and to do so early in the planning process prior to submitting your NOI.

When evaluating the potential effects of your activities, you must consider effects to listed species or critical habitats within the "action area" of your industrial activity, as identified by the USFWS IPaC and/or the NOAA Species Directory (see Part E.4 of this appendix). Action area is defined in Appendix A of the MSGP and below:

> **Action Area** – all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. See 50 CFR 402. For the purposes of this permit and for application of Endangered Species Act requirements, the following areas are included in the definition of action area:
>
> - The areas where stormwater discharges originate and flow from the industrial facility to the point of discharge into receiving waters. (Example: Where stormwater flows into a ditch, swale, or gully that leads to receiving waters and where listed species (such as listed amphibians) are found in the ditch, swale, or gully.)
>
> - The areas where stormwater from industrial activities discharge into receiving waters and the areas in the immediate vicinity of the point of discharge. (Example: Where stormwater from industrial activities discharges into a stream segment that is known to harbor listed aquatic species.)

• The areas where stormwater controls will be constructed and operated, including any areas where stormwater flows to and from the stormwater controls. (Example: Where a stormwater retention pond would be built.)

• The areas upstream and/or downstream from the stormwater discharge into a stream segment that may be affected by these discharges. (Example: Where sediment discharged to a receiving stream settles downstream and impacts a breeding area of a listed aquatic species.)

E.2 Eligibility Criterion

As required by Part 1.1.4, you must certify in your NOI that you meet one of the following criteria (A - E) to be eligible for coverage under the permit. Once you determine the applicable eligibility criterion, you must:

- Specify the basis for your selection of the applicable eligibility criterion, and if required, provide documentation that is the basis for your determination with the NOI form; and
- Provide documentation in your SWPPP that is sufficient to support your determination that you satisfy the requirements of the applicable criterion.

NOTE: You must use the information from the USFWS IPaC and NOAA Species Directory (see Part E.4 of this appendix, Step 2 and 3) when determining the presence of ESA listed species and critical habitat. Attaching aerial image(s) of the site to this NOI is helpful to EPA, USFWS, and NMFS in confirming eligibility under this criterion. Please Note: NMFS' jurisdiction includes ESA-listed marine and estuarine species that spawn in inland rivers.

Criterion A. **No ESA-listed species and/or critical habitat present in action area.** No ESA-listed species and designated critical habitat(s) are likely to occur in your facility's "action area" as defined in Appendix A. You must provide a description below of the basis for selecting this criterion and provide documentation supporting your eligibility determination in your SWPPP.

Basis statement content: A basis statement supporting the selection of this criterion must identify the USFWS and NMFS information sources used. State resources are not acceptable. Attaching aerial image(s) of the site to this NOI is helpful to EPA, USFWS, and NMFS in confirming eligibility under this criterion. Note that NMFS' jurisdiction includes ESA-listed marine and estuarine species that spawn in inland rivers.

Criterion B. **Eligibility requirements met by another operator under the 2021 MSGP.** Your industrial activity's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your "action area" under eligibility criteria A, C, D, or E of the 2021 MSGP and you have confirmed that no additional ESA-listed species and designated critical habitat not considered in that certification may be present or located in the "action area" (e.g., due to a new species listing or critical habitat designation). To certify your eligibility under this criterion, there must be no lapse of NPDES permit coverage in the other 2021 MSGP operator's certification. By certifying eligibility under this criterion, you must comply with any conditions upon which the other operator's certification was based. You must include in your NOI the NPDES ID assigned to the other 2021 MSGP operator's authorization under this permit. If your certification is based on another 2021 MSGP operator's certification under

criterion C, you must provide EPA with the relevant supporting information required (i.e., permit tracking number, industrial activity SWPPP, a description of the basis for the criterion selected) in your NOI form.

Basis statement content: A basis statement supporting the selection of this criterion must identify the eligibility criterion of the other MSGP NOI, the authorization date, and confirmation that the authorization is effective.

Criterion C1. **Facility eligible for Criterion C in the 2015 MSGP with NO CHANGE to listed species, critical habitat, or action area.** Your facility was eligible for Criterion C in the 2015 MSGP and there has been no change in your facility's action area and you have confirmed that there are no additional threatened or endangered species or designated critical habitat listed by USFWS and/or NMFS in your action area since your certification under Criterion C in the 2015 MSGP. You must provide a description of the basis of this criterion selected on your NOI form and provide documentation supporting your eligibility determination in your SWPPP.

Basis statement content: A basis statement supporting the selection of this criterion must provide the USFWS and/or NMFS resources consulted that helped you determine that there are no additional and/or critical habitat listed by under the jurisdiction of the Services in your action area.

Criterion C2. **Facility eligible for Criterion C in the 2015 MSGP with CHANGES to listed species, critical habitat, or action area.** Your facility was eligible for Criterion C in the 2015 MSGP, but there have been changes in your facility's action area, and/or additional threatened or endangered species and/or designated critical habitat have been listed by USFWS and/or NMFS in your action area since your certification under Criterion C under the 2015 MSGP. You must provide a description of the basis of this criterion selected on your NOI form and provide documentation supporting your eligibility determination in your SWPPP. You must submit your completed Criterion C2 Eligibility information at the same time that you submit your NOI, which will be held for 30 additional days prior to the standard 30-day review for all NOIs.

Basis statement content: A basis statement supporting the selection of this criterion must identify the following:

1. A description of the changes in the facility's action area (if applicable).

2. The USFWS and/or NMFS resources consulted that helped you determine that additional species and/or critical habitat have been listed/designated by either of the Services in your action area.

3. What ESA-listed species and/or designated critical habitat are located in your "action area".

4. Distance in miles between your site and the ESA-listed species and/or designated critical habitat within the action area (in miles, or state "on site" if the ESA-listed species and/or designated critical habitat is within the area to be disturbed).

5. A description of EPA approved measures you will implement or will continue to implement to ensure no likely adverse effects on ESA-listed species and/or critical habitat.

Criterion C3. **ESA-listed species and/or designated critical habitat likely to occur, but discharges not likely to adversely affect them.** ESA-listed threatened or endangered species or their designated critical habitat(s) under the jurisdiction of USFWS and/or NMFS are likely to occur in or near your facility's "action area," and you certify to EPA that your industrial activity's discharges and discharge-related activities are not likely to adversely affect ESA-listed and/or critical habitat. To certify your eligibility under this criterion, you must complete the Criterion C3 Eligibility Form, which you must complete additional questions in the Endangered Species Protection section of the NOI in NeT-MSGP, unless the EPA Regional Office grants you a waiver from electronic reporting, in which case you must submit to EPA at least 30 days prior to filing your NOI for permit coverage. After evaluation of your Criterion C3 Eligibility Form, EPA may require additional measures that you must implement to avoid or eliminate likely adverse effects on ESA-listed species and/or critical habitat from discharges and discharge-related activities. You must submit your completed Criterion C3 Eligibility information at the same time that you submit your NOI, which will be held for 30 additional days prior to the standard 30-day review for all NOIs. You must also provide a description of the basis for the criterion you selected on your NOI form and provide documentation supporting your eligibility determination in your SWPPP.

Basis statement content: A basis statement supporting the selection of this criterion must identify the following:

1. The USFWS and NMFS information resources and expertise (e.g., state or federal biologists) used to arrive at this conclusion. Any supporting documentation should explicitly state that both ESA-listed species and designated critical habitat under the jurisdiction of the USFWS and/or NMFS were considered in the evaluation.

2. What ESA-listed species and/or designated critical habitat are located in your "action area".

3. Distance in miles between your site and the ESA-listed species and/or designated critical habitat within the action area (in miles, or state "on site" if the ESA-listed species and/or designated critical habitat is within the area to be disturbed).

4. A description of EPA approved measures you will implement to ensure no likely adverse effects on ESA-listed species and/or critical habitat.

5. A statement affirming that "I agree to implement any additional measures that were determined by EPA to be necessary to ensure that my discharges and/or discharge-related activities will not have likely adverse effects on listed species and critical habitat."

6. If the EPA Regional Office granted you a waiver from electronic reporting, date you sent completed Criterion C3 Eligibility form to EPA.

Criterion D. **ESA Section 7 consultation has successfully concluded**. Consultation between a Federal Agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the Endangered Species Act has concluded. The consultation must have addressed the effects of the facility's discharges and discharge-related activities on ESA-listed species and/or designated critical habitat under the jurisdiction of USFWS and/or NMFS. To certify eligibility under this criterion, indicate the result of the consultation:

i. A biological opinion and/or conference opinion that concludes that the action in question (taking into account the effects of your facility's discharges and discharge-related activities) is not likely to jeopardize the continued existence of ESA-listed species, or result in the destruction or adverse modification of designated critical habitat; or

ii. Written concurrence from the applicable Service(s) with a finding that your facility's discharges and discharge-related activities are not likely to adversely affect ESA-listed species or designated critical habitat.

You must verify that the consultation does not warrant reinitiation under 50 CFR §402.16. If reinitiation of consultation is required, in order to be eligible under this criterion you must ensure consultation is reinitiated and the result of the consultation must be consistent with Criterion D (i), or (ii) above.

If eligible under Criterion D, you must also provide supporting documentation for your determination in your NOI and SWPPP, including the Biological Opinion (or ECO tracking number) or concurrence letter. You must include copies of the correspondence between yourself and the USFWS and/or NMFS in your SWPPP and your NOI.

Basis statement content: A basis statement supporting the selection of this criterion should identify the federal action agency(ies) involved, the field office/regional office(s) providing that consultation, any tracking numbers of identifiers associated with that consultation (e.g., IPaC number, ECO number), and the date the consultation was completed.

Criterion E. **Issuance of section 10 permit.** Potential take is authorized through the issuance of a permit under section 10 of the ESA by the USFWS and/or NMFS, and this authorization addresses the effects of the facility's discharges and discharge-related activities on ESA-listed species and designated critical habitat. You must include copies of the correspondence between yourself and the participating agencies in your SWPPP and your NOI.

Basis statement content: A basis statement supporting the selection of this criterion should identify whether USFWS or NMFS or both agencies provided a section 10 permit, the field office/regional office(s) providing permit(s), any tracking numbers of identifiers associated with that consultation (e.g., IPaC number, ECO number), and the date the permit was granted.

E.3 Eligibility Compliance

You must comply with any measures that formed the basis of your eligibility determination in Part 1.1.4 for the duration of your coverage under the MSGP in order to maintain your eligibility for coverage under the permit. These measures become permit requirements per Part 2.3. Documentation of these measures must be kept as part of your SWPPP (see Part 6.2.6.1).

E.4 Criterion Selection Worksheet

Instructions:

You must follow the step-by-step instructions in this worksheet in order to determine your eligibility under the Part 1.1.4. Alternatively, if you prefer to use a Biological Evaluation (or its equivalent) in making a determination of your eligibility, you should ensure all of the information requested below for the criterion you are selecting is fully addressed in the document and provided. You must attach this completed document or Biological Evaluation (or equivalent) to your SWPPP to support your Part 1.1.4 eligibility determination.

You may need the following information in order to determine your eligibility:

1) Your facility's draft Stormwater Pollution Prevention Plan (SWPPP), including information on receiving waters.

2) Any additional site-specific information related to your facility's discharges and discharge-related activities, such as the geographic location.

3) The list(s) of threatened and endangered species and/or any designated critical habitat in your action area, as acquired from the Fish and Wildlife Service and/or the National Marine Fisheries Service. Directions on how to acquire species lists is described in a subsequent section below.

   Note that much of the information needed to complete this worksheet is also needed in order to prepare your NOI for permit coverage and is information that is part of your SWPPP. You may copy and paste any information that is already required and completed in your SWPPP into this worksheet. (*You may also decide to make minor changes or additions to your SWPPP while filling out the worksheet for clarification purposes or to address any concerns that are identified below.)*

STEP 1: DETERMINE IF YOU MEET THE ELIGIBILITY REQUIREMENTS OF CRITERION B, D, or E.

I. You should first determine whether you are eligible under criterion B (because another operator has accounted for your action area in their valid certification of eligibility under the 2021 MSGP), criterion D (because of a previously completed ESA section 7 consultation), or criterion E (because of a previously issued ESA section 10 permit).

II. If you determine that your facility does not meet criterion B, D, or E (e.g., due to difference in action area described, lack of analysis of appropriate effects, new listings or designation of critical habitat), proceed to **Step 2** below.

Criterion B Eligibility Requirements

If your industrial activities were already addressed in another operator's valid certification of eligibility under the current 2021 MSGP, you may be eligible for coverage under criterion B. In order to be eligible for coverage under criterion B, you must confirm that **all** three of the following are true:

- ☐ You have confirmed that the other operator's certification of eligibility accounted for your action area and that the eligibility determination was valid.
- ☐ There has been no lapse of NPDES permit coverage in the other operator's certification.

☐ You will comply with all measures that formed the basis of the other operator's valid certification of eligibility. Provide the operator's NPDES permit number and list any measures that you must comply with in the box below (or enter "N/A" if none exist):

- **If all three of the above are true, you may select criterion B on your NOI.** You must include in your NOI the NPDES ID assigned to the other operator's authorization under this permit, and a description of the basis for the criterion selected on your NOI form, including the eligibility criterion selected in the other operator's NOI. You must include this completed Worksheet in your SWPPP.
- **If any of the above are <u>not</u> true, you may <u>not</u> select criterion B and must proceed to <u>Step 2</u>.** For example, if there are any listed species in your action area that were not addressed in the other operator's certification, you are not eligible under criterion B.

<u>Criterion D Eligibility Requirements</u>

If consultation under section 7 of the ESA has concluded, you may be eligible for coverage under criterion D. In order to be eligible for coverage under criterion D, you must confirm that **all** two of the following are true:

☐ A consultation between a federal agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has concluded. Consultations can be either formal or informal, and would have occurred only as a result of a separate federal action (e.g., during application for an individual wastewater discharge permit or the issuance of a wetlands dredge and fill permit), <u>and</u> the consultation must have addressed the effects of your industrial activity's discharges and discharge-related activities on all ESA-listed threatened or endangered species and all designated critical habitat in your action area. The result of this consultation must be either:

i. A biological opinion currently in effect that concludes that the action in question (taking into account the effects of your facility's discharges and discharge-related activities) is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. The biological opinion must have included the effects of your facility's discharges[1] and discharge-related activities on all the listed species and designated critical habitat in your action area. To be eligible under (i), any

[1] Effects of discharge includes, but is not limited to, the analysis of the hydrological, chemical, and biological effects of the discharge on listed species, their prey, and their habitat, as well as critical habitat, where designated. For example, the effects analysis would have evaluated whether the various pollutants in the discharge (e.g., TSS, metals) would adversely affect listed species through exposure to the pollutants, or to their prey or habitat. Effects that look only at short-term effects unrelated to the stormwater discharge effects to listed species are not sufficient for these purposes.

reasonable and prudent measures specified in the incidental take statement must be implemented;

ii. Written concurrence (e.g., letter of concurrence) from the applicable Service(s) with a finding that your facility's discharges and discharge-related activities are not likely to adversely affect ESA-listed species and/or designated critical habitat. The concurrence letter must have included the effects of your facility's discharges and discharge-related activities on all the ESA-listed species and/or designated critical habitat on your species list(s) acquired from the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service as part of this worksheet.

☐ The consultation does not warrant reinitiation under 50 CFR §402.16; or, if reinitiation of consultation is required (e.g., due to a new species listing or critical habitat designation; new information), you have reinitiated the consultation and the result of the consultation is consistent with the statements above. Attach a copy of any reinitiation documentation from the Services or other consulting federal agency.

- **If both of the above are true, you may select criterion D on your NOI.** You must also provide a description of the basis for the criterion selected on your NOI form and you must include this completed worksheet in your SWPPP. In both your SWPPP and NOI you must also provide the Biological Opinion (or ECO tracking number) or concurrence letter and any other documentation supporting your eligibility determination.
- **If any of the above are not true, you may not select criterion D and must proceed to Step 2.** For example, if the biological opinion or written concurrence did not include the effects of the discharge or discharge-related activities as described above (e.g., the previous consultation covered some but not all of the species or critical habitat in your action area as shown on your species list), or if the consultation is no longer valid (e.g., due to new species listings), you are not eligible under criterion D.

Criterion E Eligibility Requirements

If your industrial activities are the subject of a permit under section 10 of the ESA, and this authorization addresses the effects of your facility's discharges and discharge-related activities on ESA-listed species and designated critical habitat in your action area, you may be eligible for coverage under criterion E. In order to be eligible or coverage under criterion E, you must confirm that the following is true:

☐ A permit has been issued under section 10 of the ESA. The permit authorization specifically addresses the effects of your facility's discharges and discharge-related activities (if applicable) on all federally-listed species and designated critical habitat in your action area.

- **If the above is true, you may select criterion E on your NOI.** You must also provide a description of the basis for the criterion selected on your NOI form and must include this completed worksheet in your SWPPP. In both your SWPPP and your NOI you must provide a copy of the section 10 permit issued by the Services.
- **If the above is not true, you may not select criterion E and must proceed to Step 2.** For example, if a permit has been issued under section 10 of the ESA, but the permit authorization did not address the effects of your facility's discharges and/or discharge-related activities on all federally-listed species and designated critical

habitat in your action area, you are not eligible under criterion E, but you should attach a copy of the permit to the SWPPP for reference.

E.5 STEP 2: DETERMINE THE EXTENT OF YOUR ACTION AREA

You must determine whether species listed as either threatened or endangered, or their critical habitat(s) are located in your facility's action area (i.e., all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action, including areas beyond the footprint of the facility that are likely to be affected by stormwater discharges, discharge-related activities, and authorized non-stormwater discharges). Consider the following in determining the action area for your facility:

- Discharges of pollutants into downstream areas can expand the action area well beyond the footprint of your facility and the discharge point(s). Take into account the controls you will be implementing to minimize pollutants and the receiving waterbody characteristics (e.g., perennial, intermittent, ephemeral) in determining the extent of physical, chemical, and/or biotic effects of the discharges. All receiving waterbodies that could receive pollutants from your facility must be included in your action area.
- Discharge-related activities must also be accounted for in determining your action area. Discharge-related activities are any activities that cause, contribute to, or result in stormwater and authorized non-stormwater point source discharges, and measures such as the siting, construction, and operation of stormwater controls to control, reduce, or prevent pollutants from being discharged. For example, any new or modified stormwater controls that will have noise or other similar effects, and any disturbances associated with construction of controls, are part of your action area.

If you have any questions about determining the extent of your action area, you may contact EPA or the Services for assistance.https://www.epa.gov/npdes/contact-us-stormwater#regional

You must include a **map and a written description of** the action area of your facility in Attachment 1 of this appendix. You may choose to include the map that is generated from the FWS' on-line mapping tool IPaC (the *Information, Planning, and Consultation System*) located at http://ecos.fws.gov/ipac/ (see Step 3 for information about using this tool).

You must proceed to **Step 3** below.

E.6 STEP 3: DETERMINE IF LISTED THREATENED OR ENDANGERED SPECIES AND/OR CRITICAL HABITAT ARE PRESENT IN YOUR ACTION AREA.

You must determine whether species listed as either threatened or endangered under the Endangered Species Act, and/or their designated critical habitat(s) (as defined in Appendix A), are located in your facility's action area. ESA listed species and designated critical habitat are under the purview of the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS), and in many cases, you will need to acquire species and critical habitat lists from both Services.

- For NMFS species and critical habitat information, use the following webpages, which provide up-to-date information on listed species

  (https://www.fisheries.noaa.gov/species-directory/threatened-endangered) and critical habitat https://www.fisheries.noaa.gov/national/endangered-species-conservation/critical-habitat. To determine the field office that corresponds to your facility, go to https://www.fisheries.noaa.gov/regions. Choose the Region where the project is based from the left-hand column and the office from the About Us on the right-hand column.

If the action area includes coastal waters or waters used by species that migrate between fresh and salt waters (e.g., salmon, sturgeon), you must obtain a species list from NMFS field office.

- For FWS species information, use the on-line mapping tool IPaC (the *Information, Planning, and Consultation System*) located at http://ecos.fws.gov/ipac/, and follow these steps:
    - *Select Get Started*.
    - **Search or zoom to find your location:** Use an address, city name or other location to find your facility then use the zoom in/out feature to see the entire extent of your action area on the screen..
    - **Define you action area:** Use one of the mapping features (e.g., sketch, polygon or line drawing tool) to draw your entire action area.
        - For the aquatic portion of your action area, trace the waterbody(ies) with the tool to characterize your action area.
        - If your proposal will include any upland activities (i.e., discharge-related activities), or if there is some aspect of your discharge that would potentially result in effects to terrestrial species, include the corresponding upland areas within your action area.
        - When you are done, go to confirm and press *Continue*.
    - Select *Define Project* to request an Official Species List
    - Complete the fields on the Official Species List Request page and include "(MSGP)" at the end of the project description.
        - For Classification, select "Water Quality Modification".
        - Select the appropriate requesting agency/organization type (for most operators, this should be "Other").
    - Submit the request to acquire an Official Species List, which should show both listed species as well as any designated critical habitat that are present in the action area in the previous step.
    - Note: *If a link to an Official Species List is not available on the page, follow the web link of the office(s) indicated, or contact the office directly by mail or phone if a web link is not shown*.

The principle authority for critical habitat designations and associated requirements is found at 50 CFR Parts 17 and 226.

Attach a copy of the species and critical habitat list(s) from the Service(s) to Attachment 2 of this appendix and use the list(s) to complete the rest of this worksheet. For FWS species, include the full printout from your IPaC query/Official Species List in Attachment 2. You can include the map from your IPaC query in Attachment 1. For NMFS species, include the full printout from the Species Directory with the correct Region selected.

If after following the steps you have determined that there are no listed species and/or designated critical habitat in your action area, you may be eligible for coverage under criterion A.

If you have determined that there are or may be listed species and/or designated critical habitat in your action area, you are not eligible under criterion A and must proceed to **Step 4** below.

Criterion A Eligibility Requirements

In order to be eligible for coverage under criterion A, you must confirm that the following is true:

☐ I have confirmed there to be no ESA-listed species and no critical habitat in my action area.

- **If the above is true, you may select criterion A on your NOI form.** You must also provide a description of the basis for the criterion selected on your NOI form. You must include this completed worksheet in your SWPPP. *Note: If your Official Species List from the USFWS indicated no species or critical habitat were present in your action area, include the full consultation tracking code at the top of your Official Species List in your NOI in the basis statement for Criterion A. If an Official Species List was not available on IPaC, list the contact date and name of the Service staff with whom you corresponded to verify no USFWS species or critical habitat were present in your action area.*

Note: For existing dischargers that have previously obtained coverage under criterion A, you must verify whether ESA-protected species and/or critical habitat are expected to exist in your action area, as described above. Please note that if you now find that your action area overlaps with ESA-protected species or critical habitat, you must proceed to Step 4.

- If the above is not true, you may not select criterion A and must proceed to **Step 4** to determine if you can become eligible under criterion C.

STEP 4: DETERMINE IF YOUR INDUSTRIAL FACILITY'S DISCHARGES OR DISCHARGE-RELATED ACTIVITIES ARE LIKELY TO ADVERSELY AFFECT LISTED THREATENED OR ENDANGERED SPECIES OR DESIGNATED CRITICAL HABITAT AND ANY MEASURES THAT MUST BE IMPLEMENTED TO AVOID ADVERSE EFFECTS

If in Step 3 you determined that listed species and/or designated critical habitat could exist in your action area, you must next assess whether your discharges and discharge-related activities are likely to adversely affect ESA-listed threatened or endangered species or designated critical habitat, and whether any additional measures are necessary to ensure no likely adverse effects. In order to make a determination of your facility's likelihood of adverse effects, you must complete additional questions in the Endangered Species Protection section of the NOI in NeT-MSGP, unless the EPA Regional Office grants you a waiver from electronic reporting, in which case you must complete the attached *Criterion C3 Eligibility Form* and must submit this form to EPA a minimum of 30 days prior to filing your NOI for permit coverage. After you submit your NOI containing Criterion C3 information or your *Criterion C3 Eligibility Form*, you may be contacted by EPA with additional measures that you must implement in order to ensure your eligibility under criterion C3.

Criterion C3 Eligibility Form

Instructions:

In order to be eligible for coverage under criterion C3, **you must complete the Endangered Species Protection section of the Notice of Intent in the NPDES eReporting Tool (NeT-MSGP)**. Per Part 7.1, you must submit your NOI electronically via NeT-MSGP, unless the EPA Regional Office grants you a waiver from electronic reporting, in which case you may use this paper Criterion C3 form. If using the paper form, you must complete the following form and you must submit it to EPA following the instructions in Section VII a **minimum of 30 days prior to filing your NOI for permit coverage.** After you submit your form, you may be contacted by EPA with additional measures (e.g., additional stormwater controls or modifications to your discharge- related activities) that you must implement in order to ensure your eligibility under criterion C3.

If after completing this worksheet you cannot make a determination that your discharges and discharge-related activities are not likely to adversely affect ESA listed threatened or endangered species or designated critical habitat, you must submit this completed worksheet to EPA, and you may not file your NOI for permit coverage until you receive a determination from EPA that your discharges and/or discharge-related activities are not likely to adversely affect ESA-protected species and critical habitat.

Note: Much of the information needed for this form can be obtained from your draft SWPPP which will be needed when you file your NOI.

SECTION I. OPERATOR, FACILITY, AND SITE LOCATION INFORMATION.

1) **Operator Information**

   a) **Operator Name:** _____

   b) **Point of Contact**

   First Name:_____ **Last Name:** _____

   Phone Number: _____

   E-mail: _____

2) **Facility Information**

   a) **Facility Name:** _____

   b) **Check which of the following applies:**

☐ I am seeking coverage under the MSGP as a new discharger or as a new source

☐ I am seeking coverage under the MSGP as an existing discharger and my facility has modifications to its discharge characteristics (e.g., changes in discharge flow or area drained, different pollutants) and/or discharge-related activities (e.g., stormwater controls)

Indicate the number of years the facility has been in operation:_____years

Provide your NPDES ID (i.e., permit tracking number) from your previous MSGP coverage: _____

☐ I am seeking coverage under the MSGP as an existing discharger and there are no modifications to my facility.

Indicate the number of year(s) the facility has been in operation: _____ year(s)

Provide your NPDES ID (i.e., permit tracking number) from your previous MSGP coverage: _____

c) Facility Address:

Address 1: _____

Address 2: _____

City: _____ **State:** _____ **Zip Code:** _____

d) Identify the primary industrial sector to be covered under the 2021 MSGP:

SIC Code _____ or Primary Activity Code _____

Sector _____ and Subsector _____

e) Identify the sectors of any co-located activities to be covered under the 2021 MSGP:

Sector _____ Subsector _____

Sector _____ Subsector _____

Sector _____ Subsector _____

Sector _____ Subsector _____

Sector _____ Subsector _____

Sector _____ Subsector _____

f) Estimated area of industrial activity exposed to stormwater: acres

g) Provide a general description of the industrial activities that are taking place at this facility:

3) Receiving Waters Information

List all the stormwater outfalls from your facility.				For each outfall, provide the following receiving water information:	
Discharge Point ID	**Design Capacity (if known)**	**Latitude (decimal degrees)**	**Longitude (decimal degrees)**	**Name of the receiving water that receives stormwater from the discharge point and/or from the MS4 that the discharge point discharges to**	**Type of Waterbody (e.g., lake, pond, river/stream/creek, estuarine/marine water)**
		_ _ _ . _ _ _ _	_ _ _ . _ _ _ _		
		_ _ _ . _ _ _ _	_ _ _ . _ _ _ _		
		_ _ _ . _ _ _ _	_ _ _ . _ _ _ _		
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		_ _ _ . _ _ _ _	_ _ _ . _ _ _ _		

SECTION II. ACTION AREA

As required in Step 2 of Section E.4 of Appendix E, You must include a map and a written description of the action area of your facility in Attachment 1 of this appendix.

SECTION III. LISTED SPECIES AND CRITICAL HABITAT LIST

As required in Step 3 of Section E.4 of Appendix E., attach a copy of the species and critical habitat list(s) from the Service(s) to Attachment 2 of this appendix and use the list(s) to complete the rest of this worksheet. For FWS species, include the full printout from your IPaC query/Official Species List in Attachment 2. You can include the map from your IPaC query in Attachment 1.

Review your species list in Attachment 2, choose one of the following three statements, and follow the corresponding instructions:

Note: For the purposes of this permit, "terrestrial species" would not include animal or plant species that 1) spends any portion of its life cycle in a waterbody or wetland, or 2) if an animal, depends on prey or habitat that occurs in a waterbody or wetland. For example, shorebirds, wading birds, amphibians, and certain reptiles would not be considered terrestrial species under this definition. Please also be aware that some terrestrial animals (e.g., certain insects, amphibians) may have an aquatic egg or larval/juvenile phase.

☐ The species list includes only terrestrial species and/or their designated critical habitat. No aquatic or aquatic- dependent species or their critical habitat are present in the action area. **You may skip to Section IV of this form. You are not required to fill out Section V.**

☐ The species list includes only aquatic and/or aquatic-dependent species and/or their designated critical habitat. No terrestrial species or their critical habitat are present in the action area. **You may skip to Section V of this form and are not required to fill out Section IV.**

☐ The species list includes both terrestrial and aquatic or aquatic-dependent species and/or their designated critical habitat. **You must fill out both Sections IV and V of this form.**

SECTION IV. EVALUATION OF DISCHARGE-RELATED ACTIVITIES EFFECTS

Note: You are only required to fill out this section if your facility's action area contains terrestrial species and/or their designated critical habitat. If your action area only contains aquatic and/or aquatic-dependent species and/or their designated critical habitat, you can skip directly to Section V.

Most of the potential effects related to coverage under the MSGP are assumed to occur to aquatic and/or aquatic-dependent species. However, in some cases, potential effects to terrestrial species and/or their critical habitat should be considered as well from any discharge-related activities that occur during coverage under the MSGP. Examples of discharge-related activities that could have potential effects on listed terrestrial species or their critical habitat include the storage of materials and land disturbances associated with stormwater management-related activities (e.g., the installation or placement of stormwater control measures).

A. Select the applicable statement(s) below and follow the corresponding instructions:

☐ There are no discharge-related activities that are planned to occur during my coverage under the 2021 MSGP. You can conclude that your discharge-related activities will have no likely adverse effects, and:

- If there are any aquatic or aquatic-dependent species and/or their critical habitat in your action area, you must skip to Section V, *Evaluation of Discharge Effects,* below.
- If there are no aquatic or aquatic-dependent species, you may skip to Section VI and verify that your activities will have no likely adverse effects. You must submit this form to EPA as specified in Section VII of this form. You may select criterion C on your NOI form and may submit your NOI for permit coverage 30 days after you have submitted this *Criterion C Eligibility Form*. You must also provide a description of the basis for the criterion you selected on your NOI form, **including the species and critical habitat list(s) in your action area**, as well as any other documentation supporting your eligibility. You must also include this completed *Criterion C Eligibility Form* in your SWPPP.

☐ There are discharge-related activities planned as part of the proposal. Describe your discharge- related activities in the following box and continue to (b) below.

B. In order to ensure any discharge-related activities will have no likely adverse effects on ESA-listed threatened and endangered species and/or their designated critical habitat, you must certify that all the following are true:

☐ Discharge-related activities will occur:

- on previously cleared/developed areas of the site where maintenance and operation of the facility are currently occurring or where existing conditions of the area(s) in which the discharge-related activities will occur precludes its use by listed species (e.g., work on existing impervious surfaces, work occurring inside buildings, area is not used by species), and
- if discharge-related activities will include the establishment of structures (including, but not limited to, infiltration ponds and other controls) or any related disturbances, these structures and/or disturbances will be sited in areas that will not result in isolation or degradation of nesting, breeding, or foraging habitat or other habitat functions for listed animal species (or their designated critical habitat), and will avoid the destruction of native vegetation (including listed plant species).

☐ If vegetation removal (e.g., brush clearing) or other similar activities will occur, no terrestrial listed species that use these areas for habitat would be expected to be present during vegetation removal and these activities will not occur within critical habitat.

If all the above are true, you can conclude that your discharge-related activities will have no likely adverse effects, and:

- If there are any aquatic or aquatic-dependent species and/or critical habitat in your action area, you must skip to Section V, *Evaluation of Discharge Effects,* below.
- If there are no aquatic or aquatic-dependent species, you may skip to Section VI and verify that your activities will have no likely adverse effects. You must submit this form to EPA as specified in Section VII of this form. You may select criterion C on your NOI and may submit your NOI for permit coverage 30 days after you have submitted this completed form. You must also provide a description of the basis for the criterion you selected on your NOI form, **including the species and critical habitat list(s)**, and any other documentation supporting your eligibility. You must also include this completed *Criterion C Eligibility Form* in your SWPPP.
- **If any of the above are not true**, you cannot conclude that your discharge-related activities will have no likely adverse effects. You must complete the rest of this form (if applicable) and must submit the form to EPA for assistance in determining your eligibility for coverage.

SECTION V. EVALUATION OF DISCHARGE EFFECTS

Note: You are only required to fill out this section if your facility's action area includes aquatic and/or aquatic-dependent species and/or their critical habitat.

In this section, you will evaluate the likelihood of adverse effects from your facility's discharges. The scope of effects to consider will vary with each facility and species/critical habitat characteristics. The following are examples of discharge affects you should consider:

- *Hydrological Effects.* Stormwater discharges may adversely affect receiving waters by causing changes in water quality parameters such as turbidity, temperature, salinity, or pH. Stormwater discharges may adversely affect the immediate vicinity of the discharge point through streambank erosion and scour. These effects will vary with the amount of stormwater

discharged and the volume and condition of the receiving water. Where a stormwater discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely.

- *Toxicity of Pollutants.* Pollutants in stormwater may have toxic effects on listed species and may adversely affect critical habitat. Exceedances of benchmarks, effluent limitation guidelines, or state or tribal water quality requirements may be indicative of potential adverse effects on listed species or critical habitat. However, some listed species may be adversely affected at pollutant concentrations below benchmarks, effluent limitation guidelines, and state or tribal water quality standards due to exposures to multiple stressors at the same time. In addition, stormwater pollutants identified in Part 6.2.3.2 of your SWPPP, but not monitored as benchmarks or effluent limitation guidelines, may also adversely affect listed species and critical habitat.

As these effects are difficult to analyze for listed species, their prey, habitat, and designated critical habitat, this form helps you to analyze your discharges to make a determination of whether your discharges will likely have adverse effects and whether there are any additional controls you can implement to ensure no likely adverse effects.

A. Evaluation of Pollutants and Controls to Avoid Adverse Effects. In this section, you must document **all** of your pollutant sources and pollutants expected to be discharged in stormwater (see Part 8). You must also document the controls you will implement to avoid adverse effects on listed aquatic and aquatic-dependent species and critical habitat. You must include specific details about the expected effectiveness of the controls in avoiding adverse effects to the listed aquatic-and aquatic-dependent species and critical habitat. Attach additional pages if needed.

Potential Pollutant Source	**Potential Pollutants**	**Controls to Avoid Adverse Effects on Listed Aquatic and Aquatic-Dependent Species and Critical Habitat.** Include information supporting why the control(s) will ensure no adverse effects, including any data you have about the effectiveness of the control(s) in reducing pollutant concentrations. You may also attach photos of
e.g., **vehicle and equipment fueling**	***e.g.,*** • **Oil & grease** • **Diesel** • **Gasoline** • **TSS** • **Antifreeze**	***e.g.,*** • **Fueling operators (including the transfer of fuel from tank trucks) will be conducted on an impervious or contained pad or under cover** • **Drip pans will be used where leaks or spills of fuel can occur and where making and breaking hose connections** • **Spill kit will be kept on-site in close proximity to potential spill areas** • **Any spills will be cleaned-up immediately using dry clean-up methods** • **Stormwater runoff will be diverted around fueling areas using diversion dikes and curbing**

Potential Pollutant Source	Potential Pollutants	Controls to Avoid Adverse Effects on Listed Aquatic and Aquatic-Dependent Species and Critical Habitat.

Potential Pollutant Source	Potential Pollutants	Controls to Avoid Adverse Effects on Listed Aquatic and Aquatic-Dependent Species and Critical Habitat.
☐ Check if you are not able to make a preliminary determination that any of your pollutants will be controlled to a level necessary to avoid adverse effects on aquatic and/or aquatic-dependent listed species and their designated critical habitat. You must check in Section VI that you are unable to make a determination of no likely adverse effects and must complete the rest of the form. You must submit your completed form to EPA for assistance in determining your eligibility for coverage.		

B. Analysis of Effects Based on Past Monitoring Data. Select which of the following applies to your facility:

- ☐ I have no previous monitoring data for my facility because there are no applicable monitoring requirements for my facility's sector(s).
- ☐ I have no previous monitoring data for my facility because I am a new discharger or a new source, but I am subject to monitoring under the 2021 MSGP. You must provide information to support a conclusion that your facility's discharges are not expected to result in benchmark or numeric effluent limit exceedances that will adversely affect listed species or their critical habitat:

- ☐ My facility has not had any exceedances under the 2015 MSGP of any required benchmark(s) or numeric effluent limits. I comply with the applicable monitoring requirements and have not had any exceedances
- ☐ My facility has had exceedances of one or more benchmark(s) or numeric effluent limits under the 2015 MSGP, but I have addressed them during my coverage under the 2015 MSGP, or in my evaluation of controls to avoid adverse effects in (A) above. Describe all actions (including specific controls) that you will implement to ensure that the pollutants in your discharge(s) will not result in likely adverse effects from future exceedances.

- ☐ Check if your facility has had exceedances of one or more benchmarks or numeric effluent limits under the 2015 MSGP and you have not been able to address them to avoid adverse effects from future exceedances, or if you are a new discharger or a new source but you are not sure if you can avoid adverse effects from possible exceedances. You must check in Section VI that you are unable to make a determination of no likely adverse effects. You must submit your completed form to EPA for assistance in determining your eligibility for coverage. You may not file your NOI for permit coverage until you are able to make a determination that your discharges will avoid adverse effects on listed species and designated critical habitat.

SECTION VI VERIFICATION OF PRELIMINARY EFFECTS DETERMINATION

Based on Steps I – V of this form, you must verify your preliminary determination of effects on listed species and designated critical habitat from your discharges and/or discharge-related activities:

- ☐ Following the applicable Steps in I – V above, I have provided information supporting a preliminary determination that my discharges and/or discharge-related activities are not likely to adversely affect listed species and designated critical habitats.
- ☐ Following the applicable Steps in I – V above, I am **not** able to provide information supporting a preliminary determination that my discharges and/or discharge-related activities are not likely to adversely affect listed species and designated critical habitats.

Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

First Name, Middle initial, Last Name

Title

Signature:_____ Date:

E-mail:

SECTION VII CRITERION C ELIGIBILITY FORM SUBMISSION INSTRUCTIONS

Only if the applicable EPA Regional Office has granted you a waiver from electronic reporting, you must submit this completed form to EPA at msgpesa@epa.gov, including any attachments and any additional information that demonstrates how you will avoid or eliminate adverse effects to listed threatened and endangered species or designated critical habitat (e.g., specific controls you will implement to avoid or eliminate adverse effects). **Any missing or incomplete information may result in a delay of your coverage under the permit**.

If you have made a preliminary determination that your discharges and/or discharge-related activities are not likely to adversely affect listed species and critical habitat, this form must be submitted a minimum of 30 days prior to submitting your NOI for permit coverage under criterion C. Please note that during either the 30-day *Criterion C Eligibility Form* review period prior to your NOI submission, or within 30 days after your NOI submission and before you have been

authorized for permit coverage, EPA may advise you that additional information is needed, or that there are additional measures you must implement to avoid likely adverse effects.

If you are unable to make a preliminary determination that your discharges and/or discharge-related activities are not likely to adversely affect listed species and critical habitat, this worksheet must be submitted to EPA, but you may not file your NOI for permit coverage until you have received a determination from EPA that your discharges and/or discharge-related activities are not likely to adversely affect listed species and critical habitat.

Attachment 1

Include a **map and a written description** of the action area of your facility, as required in Step 2 of Section E.4 of Appendix E. You may choose to include the map that is generated from the FWS' on-line mapping tool IPaC (the *Information, Planning, and Consultation System*) located at http://ecos.fws.gov/ipac/.

The written description of your action area that accompanies your action area map must explain your rationale for the extent of the action area drawn on your map. For example, your action area written description may look something like this:

> *The action area for the (name of your facility)'s stormwater discharges extends downstream from the outfall(s) in (name of receiving waterbody) (# of meters/feet/kilometers/miles). The downstream limit of the action area reflects the approximate distance at which the discharge waters and any pollutants would be expected to cause potential adverse effects to listed species and/or critical habitat because (insert rationale). The action area does/does not extend to the (name of receiving waterbody)'s confluence with (name of confluence waterbody) because (insert rationale).*

Note that your action area written description will be highly site-specific, depending on the expected effects of your facility's discharges and discharge-related activities, receiving waterbody characteristics, etc.

Attachment 2

List or attach the list(s) of species and critical habitat in your action area on this sheet, as required in Step 3 of Section E.4 of Appendix E. You must include a list for applicable listed NMFS and USFWS species and critical habitat. If there are listed species and/or critical habitat for only one Service, you must include a statement confirming there are no listed species and/or critical habitat for the other Service. For USFWS species, include the USFWS Official Species List full printout from your IPaC query (including the consultation code and event code at the top of the FWS printout). *Note: If your Official Species List from the USFWS indicated no species or critical habitat were present in your action area, include the consultation code and event code that can be found at the top of your Official Species List in your NOI basis statement. If an Official Species List was not available on IPaC, list the contact date, the ecological services field office and the name of the Service staff with whom you corresponded to identify the existence of any USFWS species or critical habitat present in your action area.*

Appendix G - Notice of Intent (NOI) Form

Part 7.2 requires you to use the NPDES eReporting Tool, or "NeT", to prepare and submit your Notice of Intent (NOI). However, if the applicable EPA Regional office grants you a waiver to use a paper NOI form, and you elect to use it, you must complete and submit the following form.

Submission of this NOI constitutes notice that the operator identified in Section C of this form requests authorization to discharge pursuant to the NPDES Multi-Sector General Permit (MSGP) permit number identified in Section B of this form. Submission of this NOI also constitutes notice that the operator identified in Section C of this form meets the eligibility conditions of Part 1.1 of the MSGP for the facility identified in Section D of this form. To obtain authorization, you must submit a complete and accurate NOI form. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage. Refer to the instructions at the end of this form to complete your NOI.

NPDES FORM 3510-6	EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NOTICE OF INTENT (NOI) FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY UNDER THE NPDES MULTI-SECTOR GENERAL PERMIT	OMB No. 2040-0300 Exp. Date: 3/31/2024

Submission of this Notice of Intent (NOI) constitutes notice that the operator identified in Section C of this form requests authorization to discharge pursuant to the NPDES Stormwater Multi-Sector General Permit (MSGP) permit number identified in Section B of this form. Submission of this NOI also constitutes notice that the operator identified in Section C of this form meets the eligibility conditions of Part 1.1 of the MSGP for the facility identified in Section D of this form. To obtain authorization, you must submit a complete and accurate NOI form. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage. Refer to the instructions at the end of this form to complete your NOI.

A. Approval to Use Paper NOI Form

1. Have you been granted a waiver from electronic reporting from the EPA Regional Office*? ☐ YES ☐ NO

If yes, check which waiver you have been granted, the name of the EPA Regional Office staff person who granted the waiver, and the date of approval:

Waiver granted: ☐ The owner/operator's headquarters is physically located in a geographic area (i.e., ZIP code or census tract) that is identified as under-served for broadband Internet access in the most recent report from the Federal Communications Commission.

☐ The owner/operator has issues regarding available computer access or computer capability

Name of EPA staff person that granted the waiver:

Date approval obtained: / /

*** Note: You are required to obtain approval from the applicable EPA Regional Office prior to using this paper NOI form. If you have not obtained a waiver, you must file this form electronically using the NPDES eReporting Tool (NeT) at http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-eNOI-System-for-EPAs-MultiSector-General-Permit.cfm**

B. Permit Information

NPDES ID (EPA Use Only):

1. Master Permit Number: (see Appendix C of the MSGP for the list of eligible master permit numbers)
2. Are you a new discharger or a new source as defined in Appendix A? ☐ YES ☐ NO (If yes, skip to Part C of this form).
3. If you are not a new discharger or a new source, have stormwater discharges from your facility been covered previously under an NPDES permit?
   ☐ YES ☐ NO

If yes, provide the NPDES ID if you had coverage under EPA's 2015 MSGP or the NPDES ID if you had coverage under an EPA individual permit:

4. Do you have a pending enforcement action related to industrial stormwater by EPA, a state, or a citizen (to include both notices of violation (NOVs) by EPA or a state and notices of intent to bring a citizen suit)? ☐ YES ☐ NO

C. Facility Operator Information

1. Operator Information:

Operator Name:

2. Mailing Address:

Street:

City: State: ZIP Code: -

County or Similar Government Subdivision:

Phone: - - Ext.

E-mail:

2. Operator Point of Contact Information:

First Name, Middle Initial, Last Name

Title:

3. NOI Preparer Information (Complete if NOI was prepared by someone other than the certifier):

First Name, Middle Initial, Last Name

Organization:

Phone: - - Ext.

E-mail:

D. Facility Information

1. Facility Name:

2. Facility Address:

Street/Location:

City: State: ZIP Code: -

County or Similar Government Subdivision:

3. Latitude/Longitude for the facility:

Latitude: __ __ . __ __ __ __ ° N (decimal degrees) Longitude: __ __ __ . __ __ __ __ ° W (decimal degrees)

Latitude/Longitude Data Source: ☐ Maps ☐ GPS ☐ Other _____

If you used a USGS topographic map, what was the scale? _____

Horizontal Reference Datum: ☐ NAD 27 ☐ NAD 83 ☐ WGS 84

4. Is your facility located on Indian Country lands? ☐ YES ☐ NO

If yes, provide the name of the Indian tribe associated with the area of Indian country (including name of Indian reservation, if applicable):

_____

5. Are you requesting coverage under this NOI as a "federal operator" as defined in Appendix A? ☐ YES ☐ NO

6. What is the ownership type of the facility?

☐ Federal Facility (U.S.Government) ☐ Privately Owned Facility ☐ Municipality ☐ County Government

☐ Corporation ☐ State Government ☐ Tribal Government ☐ School District

☐ District ☐ Mixed Ownership (e.g., Public/Private) ☐ Municipal or Water District

7. Estimated area of industrial activity at your facility exposed to stormwater: _____ (to the nearest quarter acre)

8. Sector-Specific Information

Identify the 4-digit Standard Industrial Classification (SIC) code or 2-letter Activity Code that best represents the products produced or services rendered for which your facility is primarily engaged, as defined in the MSGP, and the applicable sector and subsector of your primary industrial activity (See Appendix D):

Primary SIC Code **OR Primary Activity Code:**

Sector: **Subsector:**

Identify the applicable sector(s) and subsector(s), SIC codes, and activity codes of any co-located industrial activity for which you are requesting permit

Sector: **Subsector:** **Sector:** **Subsector:** **Sector:** **Subsector:**

Sector: **Subsector:** **Sector:** **Subsector:** **Sector:** **Subsector:**

If you are a Sector S (Air Transportation) facility, do you anticipate using more than 100,000 gallons of pure glycol in glycol-based deicing fluids and/or 100 tons or more of urea on an average annual basis? ☐ YES ☐ NO

If you are a Sector G (Metal Mining) facility, do you have discharges from waste rock and overburden piles? ☐ YES ☐ NO

Check the type of ore you mine at your facility:

☐ Tungsten Ore ☐ Nickel Ore ☐ Aluminum Ore ☐ Mercury Ore

☐ Iron Ore ☐ Platinum Ore ☐ Titanium Ore ☐ Vanadium Ore

☐ Molybdenum ☐ Uranium, Radium, and/or Vanadium Ore ☐ Ore not listed

9. Is your facility presently inactive and unstaffed and are there no industrial materials or activities exposed to stormwater?* ☐ YES ☐ NO

*The requirement for benchmark monitoring does not apply at a facility that is inactive and unstaffed, provided that there are no industrial materials or activities exposed to stormwater. Note that if your facility becomes inactive and unstaffed and/or industrial materials or activities become exposed to stormwater during the permit term, you must submit an NOI modification to reflect the change.

E. Discharge Information

1. By indicating "Yes" below, I confirm that I understand that the MSGP only authorizes the authorized stormwater discharges in Part 1.2.1 and the allowable non-stormwater discharges listed in Part 1.2.2. Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), during an inspection, etc. If any discharges requiring NPDES permit coverage other than the authorized stormwater and non-stormwater discharges listed in Parts 1.2.1 and 1.2.2 will be discharged, they must be covered under another NPDES permit. ☐ YES

2. Federal Effluent Limitation Guidelines

Are you requesting permit coverage for any stormwater discharges subject to effluent limitation guidelines? ☐ YES ☐ NO

If yes, which effluent limitation guidelines apply to your stormwater discharges?

40 CFR Part/Subpart	Eligible Discharges	Affected MSGP Sector	New Source Date	Check if Applicable
Part 411, Subpart C	Runoff from material storage piles at cement manufacturing facilities	E	2/20/1974	☐
Part 418 Subpart A	Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	C	4/8/1974	☐
Part 423	Coal pile runoff at steam electric generating facilities	O	11/19/1982 10/8/1974[1]	☐
Part 429, Subpart I	Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	A	1/26/1981	☐
Part 436, Subpart B, C, or D	Mine dewatering discharges at crushed stone mines, construction sand and gravel mines, or industrial sand mines	J	N/A	☐
Part 443, Subpart A	Runoff from asphalt emulsion facilities	D	7/28/1975	☐
Part 445, Subparts A & B	Runoff from hazardous waste and non-hazardous waste landfills	K, L	2/2/2000	☐
Part 449	Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	S	6/15/2012	☐

[1]NSPS promulgated in 1974 were not removed via the 1982 regulation; therefore, wastewaters generated by Part 423-applicable sources that were New Sources under the 1974 regulations are subject to the 1974 NSPS.

3. Receiving Waters Information: (Attach a separate list if necessary)

List all of the stormwater discharge points from your facility. Each discharge point must be identified by a unique 3-digit ID (e.g., 001, 002). Also provide the latitude and longitude in degrees decimal for each discharge point.		**For each outfall, provide the following receiving water information:**					
		Provide the name of the first water of the U.S. that receives stormwater directly from the discharge point and/or from the MS4 that the outfall discharges to:	**If the receiving water is impaired (on the CWA 303(d) list), list the pollutants that are causing the impairment:**	**If a TMDL has been completed for this receiving waterbody, providing the following information:**	**Is this receiving water saltwater or freshwater?**	**Is this receiving water designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) or as a Tier 3 water (Outstanding National Resource Water)?**	***For freshwater discharges from operators in subsectors K1 and G2 only*: is this receiving water still/standing (lentic) (e.g., lake or impoundment) or flowing (lotic) (e.g., river or stream)?**
Discharge Point ID				TMDL ID:_____ Pollutants for which there is a TMDL: _____ _____	☐ Freshwater ☐ Saltwater	☐ Tier 2/2.5 ☐ Tier 3 (Outstanding National Resource Waters)*	☐ Still/standing ☐ Flowing
Latitude							
Longitude							
Discharge Point ID				TMDL ID:_____ Pollutants for which there is a TMDL: _____ _____	☐ Freshwater ☐ Saltwater	☐ Tier 2/2.5 ☐ Tier 3 (Outstanding National Resource Waters)*	☐ Still/standing ☐ Flowing
Latitude							
Longitude							
If substantially identical to other discharge point, list identical discharge point ID: _____							
Discharge Point ID				TMDL ID:_____ Pollutants for which there is a TMDL: _____ _____	☐ Freshwater ☐ Saltwater	☐ Tier 2/2.5 ☐ Tier 3 (Outstanding National Resource Waters)*	☐ Still/standing ☐ Flowing
Latitude							
Longitude							
If substantially identical to other discharge point, list identical discharge point ID: _____							

*Note: You are ineligible for coverage if you are a new discharger or new source to waters designated as Tier 3 (Outstanding National Resource Waters) for antidegradation purposes under 40 CFR 131.13(a)(3).

4. Provide the following Information about your discharge point latitude/longitude:
Latitude/Longitude Data Source:

If you used a USGS topographic map, what was the scale? _____

Horizontal Reference Datum: ☐ NAD 27 ☐ NAD 83 ☐ WGS 84

5. Does your facility discharge into a Municipal Separate Storm Sewer System (MS4)? ☐ YES ☐ NO
If yes, provide the name of the MS4 operator: _____

6. If you are subject to benchmark monitoring requirements for a hardness-dependent metal, what is the hardness of your receiving water(s) (see Appendix J)? _____(mg/L)

7. For facilities in EPA Region 10: Does your facility discharge to a federal CERCLA site listed in Appendix P? ☐ YES ☐ NO

7.a. If yes, did you notify the EPA Regional Office in advance of filing your NOI, and did the EPA Regional Office determine that you are eligible for permit coverage pursuant to Part 1.1.7*? ☐ YES ☐ NO

*** Note: If you discharge to a federal CERCLA site listed in Appendix P, you are ineligible for coverage under this permit unless you notify the EPA Regional Office in advance and the EPA Regional Office determines you are eligible coverage under this permit. In determining your eligibility for coverage under this Part, the EPA Regional Office may evaluate whether you have included adequate controls and/or procedures to ensure that your discharges will not lead to recontamination of aquatic media at the CERCLA Site such that it will cause or contribute to an exceedance of a water quality standard.**

8. *For operators in New Mexico only:* Do you anticipate the discharge of groundwater or spring water from your facility? ☐ YES ☐ NO

*If yes, below you are asked to provide information on flow and potential to encounter impacted ground or spring water such that there is a potential for contamination. If potential for contamination exists, you will be asked to provide test result data to EPA Region 6 and the NMED Surface Water Quality Bureau. If the test data exceed State Water Quality Standards, the ground or spring water cannot be discharged from the facility into surface waters under this permit. Discharge to surface waters must be conducted under a separate NPDES individual permit to ensure proper treatment and disposal. If disposal will be to the ground surface or in an unlined pond, you must submit a Notice of Intent to Discharge (NOI) to the NMED Ground Water Quality Bureau. For further assistance determining whether your facility may encounter impacted groundwater, the permittee may contact the NMED Ground Water Quality Bureau at (505) 827-2965.

8.a. If yes, what is the anticipated flow rate of the groundwater or spring water? _____

8.b. Provide information on the potential to encounter impacted ground or spring water in the space provided below:

8.c. Using the Mapper tool located at https://gis.web.env.nm.gov/oem/ for reference, check if the following groundwater pollutant sources are located nearby the anticipated source of groundwater or spring water such that there is potential for contamination:

Project Location Relative to a Source of Potential Groundwater Contamination	**Constituents likely to be required for testing**	**Check if applicable**
Within 0.5 mile of an open Leaking Tank site	BTEX (Benzene, Toluene, Ethylbenzene, and Xylene) plus additional parameters depending on site conditions.	☐
Within 0.5 mile of an open Voluntary Remediation site	All parameters listed in 20.6.4.900 NMAC, hardness and pH (or an alternate list approved by the NMED SWQB)	☐
Within 0.5 mile of an open RCRA Corrective Action site	All parameters listed in 20.6.4.900 NMAC, hardness and pH (or an alternate list approved by the NMED SWQB)	☐
Within 0.5 mile of an open Abatement site	All parameters listed in 20.6.4.900 NMAC, hardness and pH (or an alternate list approved by the NMED SWQB)	☐
Within 0.5 mile of an open Brownfield site	All parameters listed in 20.6.4.900 NMAC, hardness and pH (or an alternate list approved by the NMED SWQB)	☐
Within 1.0 mile of a Superfund site with associated groundwater contamination	All parameters listed in 20.6.4.900 NMAC, hardness and pH (or an alternate list approved by the NMED SWQB)	☐
EPA approved-sufficiently sensitive methods must be used – approved methods are listed in 40 C.F.R. 136.3.		

8.d. If any of the above are applicable, provide a summary of test data indicating the quality of the groundwater or spring water to be discharged:

F. Stormwater Pollution Prevention Plan (SWPPP) Information

1. Has the SWPPP been prepared in advance of filing this NOI, as required?

2. SWPPP Contact Information:

First Name, Middle Initial, Last Name:

Professional Title:

Phone: - - Ext.

E-mail:

3. SWPPP Availability:

Your current SWPPP or certain information from your SWPPP must be made available through one of the following two options. Select one of the options and provide the required information*:

*** Note: You are not required to post any confidential business information (CBI) or restricted information (as defined in Appendix A) (such information may be redacted), but you must clearly identify those portions of the SWPPP that are being withheld from public access.**

☐ **Option 1**: Maintain a current copy of your SWPPP on an Internet page (Universal Resource Locator or URL).

Provide the web address URL:_____

☐ **Option 2**: Provide the following information from your SWPPP:

A. Describe your onsite industrial activities exposed to stormwater (e.g., material storage; equipment fueling, maintenance, and cleaning; cutting steel beams), and potential spill and leak areas:

B. List the pollutant(s) or pollutant constituent(s) associated with each industrial activity exposed to stormwater that could be discharged in stormwater and any authorized non-stormwater discharges listed in Part 1.2.2:

C. Describe the control measures you will employ to comply with the non-numeric technology-based effluent limits required in Part 2.1.2 and Part 8, and any other measures taken to comply with the requirements in Part 2.2 Water Quality-Based Effluent Limitations (see Part 6.2.4):

D. Provide a schedule for good housekeeping and maintenance (see Part 6.2.5.1) and a schedule for all inspections required in Part 3 (see Part 6.2.5.2):

G. Endangered Species Protection

Using the instructions in Appendix E of the MSGP and the Criterion Selection Worksheet in Appendix E, Part E.4, under which criterion listed below are you eligible for coverage under this permit?* You must consider Endangered Species Act listed (ESA-listed) threatened or endangered species and/or designated critical habitat(s) under the jurisdiction of both the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) and check only the 1 box that is the most conservative criterion that applies to your facility stormwater discharge.

*Note: You must use the information from the USFWS IPaC and NMFS Species Directory (see MSGP Appendix E, Part E.4, Step 2 and 3) when determining the presence of ESA-listed species and critical habitat. Attaching aerial image(s) of the site to this NOI is helpful to EPA, USFWS, and NMFS in confirming eligibility under this criterion. Please Note: NMFS' jurisdiction includes ESA-listed marine and estuarine species that spawn in inland rivers.

After you submit your NOI and before your NOI is authorized, EPA may notify you if any additional controls are necessary to ensure your discharges have no likely adverse effects on ESA-listed species and critical habitat.

☐ A. **No ESA-listed species and/or critical habitat present in action area.** No ESA-listed species and designated critical habitat(s) are likely to occur in your facility's "action area" as defined in Appendix A. You must provide a description below of the basis for selecting this criterion and provide documentation supporting your eligibility determination in your SWPPP. **[Basis statement content: A basis statement supporting the selection of this criterion should identify the USFWS and NMFS information sources used. State resources are not acceptable. Attaching aerial image(s) of the site to this NOI is helpful to EPA, USFWS, and NMFS in confirming eligibility under this criterion. Note that NMFS' jurisdiction includes ESA-listed marine and estuarine species that spawn in inland rivers.]**

☐ B. **Eligibility requirements met by another operator under the 2021 MSGP.** Your industrial activity's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your "action area" under eligibility criteria A, C, D, or E of the 2021 MSGP and you have confirmed that no additional ESA-listed species and designated critical habitat not considered in that certification may be present or located in the "action area" (e.g., due to a new species listing or critical habitat designation). To certify your eligibility under this criterion, there must be no lapse of NPDES permit coverage in the other 2021 MSGP operator's certification. By certifying eligibility under this criterion, you must comply with any conditions upon which the other operator's certification was based. You must include in your NOI the NPDES ID assigned to the other 2021 MSGP operator's authorization under this permit. If your certification is based on another 2021 MSGP operator's certification under criterion C, you must provide EPA with the relevant supporting information required (i.e., permit tracking number, industrial activity SWPPP, a description of the basis for the criterion selected) in your NOI form. **[Basis statement content: A basis statement supporting the selection of this criterion must identify the eligibility criterion of the other MSGP NOI, the authorization date, and confirmation that the authorization is effective.]**

If you select criterion B, provide the NPDES ID from the other operator's notification of authorization under this permit: _____

☐ C(1). **Facility eligible for Criterion C in the 2015 MSGP with NO CHANGE to listed species, critical habitat, or action area.** Your facility was eligible for Criterion C in the 2015 MSGP and there has been no change in your facility's action area and you have confirmed that there are no additional threatened or endangered species or designated critical habitat under the jurisdiction of the USFWS and/or NMFS in your action area since your certification under Criterion C in the 2015 MSGP. You must provide a description of the basis of this criterion selected on your NOI form and provide documentation supporting your eligibility determination in your SWPPP. [**Basis statement content: A basis statement supporting the selection of this criterion must provide the USFWS and/or NMFS resources consulted that helped you determine that there are no additional species and/or critical habitat under the jurisdiction of the Services in your action area.]**

☐ C(2). **Facility eligible for Criterion C in the 2015 MSGP with CHANGES to listed species, critical habitat, or action area.** Your facility was eligible for Criterion C in the 2015 MSGP, but there have been changes in your facility's action area, and/or there are additional threatened or endangered species and/or designated critical habitat under the jurisdiction of the USFWS and/or NMFS in your action area since your certification under Criterion C under the 2015 MSGP. You must provide a description of the basis of this criterion selected on your NOI form and provide documentation supporting your eligibility determination in your SWPPP. **[Basis statement content: A basis statement supporting the selection of this criterion must identify the following:**

1. A description of the changes in the facility's action area (if applicable).
2. The USFWS and/or NMFS resources consulted that helped you determine that additional species and/or critical habitat have been listed/designated by either of the Services in your action area.
3. What ESA-listed species and/or designated critical habitat are located in your "action area".
4. Distance in miles between your site and the ESA-listed species and/or designated critical habitat within the action area (in miles, state "on site" if the ESA-listed species and/or designated critical habitat is within the area to be disturbed.
5. A description of EPA approved measures you will implement or will continue to implement to ensure no likely adverse effects on ESA-listed species and/or critical habitat.]

☐ C(3). **ESA-listed species and/or designated critical habitat likely to occur, but discharges not likely to adversely affect them.** ESA-listed threatened or endangered species or their designated critical habitat(s) under the jurisdiction of USFWS and/or NMFS are likely to occur in or near your facility's "action area," and you certify to EPA that your industrial activity's discharges and discharge-related activities are not likely to adversely affect ESA-listed and/or critical habitat. To certify your eligibility under this criterion, you must complete the Criterion C Eligibility Form, which you must submit to EPA at least 30 days prior to filing your NOI for permit coverage. After evaluation of your Criterion C Eligibility Form, EPA may require additional measures that you must implement to avoid or eliminate likely adverse effects on ESA-listed species and/or critical habitat from discharges and discharge-related activities. You may submit your NOI for permit coverage 30 days after submitting to EPA your completed Criterion C Eligibility Form. You must also provide a description of the basis for the criterion you selected on your NOI form and provide documentation supporting your eligibility determination in your SWPPP.
[Basis statement content: A basis statement supporting the selection of this criterion must identify the following:

1. The USFWS and NMFS information resources and expertise (e.g., state or federal biologists) used to arrive at this conclusion. Any supporting documentation should explicitly state that both ESA-listed species and designated critical habitat under the jurisdiction of the USFWS and/or NMFS were considered in the evaluation.
2. What ESA-listed species and/or designated critical habitat are located in your "action area".
3. Distance in miles between your site and the ESA-listed species and/or designated critical habitat within the action area (in miles, state "on site" if the ESA-listed species and/or designated critical habitat is within the area to be disturbed).
4. A description of EPA approved measures you will implement to ensure no likely adverse effects on ESA-listed species and/or critical habitat
5. A statement affirming that "I submitted my completed Criterion C Eligibility Form to EPA at least 30 days prior to submitting this NOI and agree to implement any additional measures that were determined by EPA to be necessary to ensure that my discharges and/or discharge-related activities will not have likely adverse effects on listed species and critical habitat."
6. Date you sent completed Criterion C Eligibility form to EPA.]

☐ D. **ESA Section 7 consultation has successfully concluded.** Consultation between a Federal Agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the Endangered Species Act has concluded. The consultation must have addressed the effects of the facility's discharges and discharge-related activities on ESA-listed species and/or designated critical habitat under the jurisdiction of USFWS and/or NMFS. To certify eligibility under this criterion, indicate the result of the consultation:

1. A biological opinion and/or conference opinion that concludes that the action in question (taking into account the effects of your facility's discharges and discharge-related activities) is not likely to jeopardize the continued existence of ESA-listed species, or result in the destruction or adverse modification of designated critical habitat; or

2. Written concurrence from the applicable Service(s) with a finding that your facility's discharges and discharge-related activities are not likely to adversely affect ESA-listed species or designated critical habitat.

   You must verify that the consultation does not warrant reinitiation under 50 CFR §402.16. If reinitiation of consultation is required, in order to be eligible under this criterion you must ensure consultation is reinitiated and the result of the consultation must be consistent with Criterion D (i), or (ii) above.

   If eligible under Criterion D, you must also provide supporting documentation for your determination in your NOI and SWPPP, including the Biological Opinion (or ECO tracking number) or concurrence letter. You must include copies of the correspondence between yourself and the USFWS and/or NMFS in your SWPPP and your NOI. **[Basis statement content: A basis statement supporting the selection of this criterion should identify the federal action agency(ies) involved, the field office/regional office(s) providing that consultation, any tracking numbers of identifiers associated with that consultation (e.g., IPaC number, ECO number), and the date the consultation was completed.]**

☐ E. **Issuance of section 10 permit.** Potential take is authorized through the issuance of a permit under section 10 of the ESA by the USFWS and/or NMFS, and this authorization addresses the effects of the facility's discharges and discharge-related activities on ESA-listed species and designated critical habitat. You must include copies of the correspondence between yourself and the participating agencies in your SWPPP and your NOI. **[Basis statement content: A basis statement supporting the selection of this criterion should identify whether USFWS or NMFS or both agencies provided a section 10 permit, the field office/regional office(s) providing permit(s), any tracking numbers of identifiers associated with that consultation (e.g., IPaC number, ECO number), and the date the permit was granted.]**

H. Historic Preservation

1. If your facility is not located on Indian country lands, is your facility located on a property of religious or cultural significance to an Indian tribe?

   ☐ YES ☐ NO

   If yes, provide the name of the Indian tribe associated with theproperty:_____

2. Using the instructions in Appendix F of the MSGP, under which historic properties preservation criterion listed in Part 1.1.4.6 are you eligible for coverage under this permit (only check 1 box)?

   ☐ A ☐ B ☐ C ☐ D

I. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

First Name, Middle, Last Name: | | |

Instructions for Completing EPA Form 3510-6

Notice of Intent (NOI) for Stormwater Discharges Associated with Industrial Activity Under the NPDES Multi-Sector General Permit

This Form Replaces Form 3510-6 (06/15) Form Approved OMB No. 2040-0300

Who Must File an NOI Form

Under section 402(p) of the Clean Water Act (CWA) and regulations at 40 CFR Part 122, stormwater discharges associated with industrial activity are prohibited to waters of the United States unless authorized under a National Pollutant Discharge Elimination System (NPDES) permit. You can obtain coverage under the MSGP by submitting a completed Notice of Intent (NOI) if you are an operator of a facility:

- that is located in a jurisdiction where EPA is the permitting authority, listed in Appendix C of the MSGP,
- that discharges stormwater associated with industrial activities, identified in Appendix D of the MSGP,
- that meets the eligibility requirements in Part 1.1 of the permit,
- that has developed a stormwater pollution prevention plan (SWPPP) in accordance with Part 6 of the MSGP; and
- that installs and implements control measures in accordance with Part 2 and Part 8 to meet numeric and non-numeric effluent limits.

Completing the Form

Obtain and read a copy of the 2021 MSGP, viewable at http://water.epa.gov/polwaste/npdes/stormwater/EPA-Multi-Sector-General-Permit-MSGP.cfm. To complete this form, type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. **Please submit original document with signature in ink - do not send a photocopied signature.**

Section A. Approval to Use Paper NOI Form

You must indicate whether you have been granted a waiver from electronic reporting from the EPA Regional Office. Note that you are not authorized to use this paper NOI form unless the EPA Regional Office has approved its use. Where you have obtained approval to use this form, indicate the waiver that you have been granted, the name of the EPA staff person who granted the waiver, and the date that approval was provided.

See http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-Contacts.cfm for a list of EPA Regional Office contacts.

Section B. Permit Information

Provide the master permit number of the permit under which you are applying for coverage (see Appendix C of the general permit for the list of eligible master permit numbers).

You must indicate whether you are a new discharger or a new source (see Appendix A for the definitions). If you are not a new discharger or a new source, you must indicate whether stormwater discharges from your facility have been previously covered under another NPDES permit. If yes, you must provide the unique NPDES ID (i.e., permit tracking number) for the previous permit your facility was covered under.

You must also indicate whether you have a pending enforcement action by EPA, a state, or a citizen, related to industrial stormwater.

Section C. Facility Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the facility described in this NOI. An operator of a facility is the legal entity that controls the operation of the facility. Refer to Appendix A of the permit for the definition of "operator". Provide the operator's mailing address, phone number, and e-mail. Correspondence for the NOI will be sent to this address. Also provide the name and title for the operator point of contact (note that the point of contact name may be the same as the operator name).

If the NOI was prepared by someone other than the certifier (for example, if the NOI was prepared by the facility SWPPP contact or a consultant for the certifier's signature), include the full name, organization, phone number, and e-mail address of the NOI preparer.

Section D. Facility Information

Enter the official or legal name and complete address, including city, state, ZIP code, and county or similar government subdivision of the facility. If the facility lacks a street address, indicate the general location of the facility (e.g., Intersection of State Highways 61 and 34). Complete facility information must be provided for permit coverage to be granted.

Provide the latitude and longitude of your facility in decimal degrees format. The latitude and longitude of your facility can be determined in several different ways, including through the use of global positioning system (GPS) receivers, U.S. Geological Survey (USGS) topographic or quadrangle maps. Refer to http://transition.fcc.gov/mb/audio/bickel/DDDMMSS-decimal.html/ for assistance in providing the proper latitude/longitude format. For consistency, EPA requests that measurements be taken from the approximate center of the facility. Specify which method you used to determine latitude and longitude. If a USGS topographic map is used, specify the scale of the map used. Enter the horizontal reference datum for your latitude and longitude. The horizontal reference datum used on USGS topographic maps is shown on the bottom left corner of USGS topographic maps; it is also available for GPS receivers.

Indicate whether the facility is on Indian country lands, and if so, provide the name of the Indian tribe associated with the area of Indian country (including name of Indian reservation, if applicable).

Indicate whether you are seeking coverage under this permit as a "federal operator" as defined in Appendix A. Also check the ownership type for the facility (e.g., Federal Facility, Privately Owned Facility, Municipality, County Government, Corporation, State Government, Tribal Government, School District, District, Mixed Ownership [e.g., public/private], Municipal or Water District).

Enter the estimated area of industrial activity at your facility exposed to stormwater to the nearest quarter acre.

Indicate whether, during coverage under this permit, there will be stormwater discharges from paved surfaces that will be sealed or re-sealed with coal-tar where industrial activities are located.

List the four-digit Standard Industrial Classification (SIC) code or two character activity code that best describes the primary industrial activities performed by your facility under which you are required to obtain permit coverage. Your primary industrial activity includes any activities performed on-site which are (1) identified by the facility's primary SIC code and included in the descriptions of 40 CFR 122.26(b)(14)(ii), (iii), (vi), or (viii); or (2) included in the narrative descriptions of 40 CFR 122.26(b)(14)(i), (iv), (v), (vii), or (ix). See Appendix D of the MSGP for a complete list of SIC codes and activities codes covered under the MSGP. Also provide the applicable sector and subsector associated with the SIC code or activity code for your primary industrial activities. For a complete list of sector and subsector codes, see Appendix D of the MSGP.

If your facility has co-located industrial activities that are not identified as your primary industrial activity, identify the sector, subsector, SIC, and

Instructions for Completing EPA Form 3510-6

Notice of Intent (NOI) for Stormwater Discharges Associated with Industrial Activity Under the NPDES Multi-Sector General Permit

This Form Replaces Form 3510-6 (06/15) Form Approved OMB No. 2040-0300

For Sector A facilities (Timber Products), indicate whether you manufacture, use or store creosote or creosote treated wood in areas that are exposed to precipitation.

For Sector S facilities (Air Transportation), indicate whether you anticipate that the entire airport facility will use more than 100,000 gallons of pure glycol in glycol-based deicing fluids and/or 100 tons or more of urea on an average annual basis. If so, additional effluent limits and monitoring conditions apply to your discharge (see Part 8.S of the permit).

For Sector G facilities (Metal Mining), check the type of ore(s) mined at the facility.

Indicate whether your facility is currently inactive and unstaffed. Note that if your facility becomes inactive and unstaffed and/or industrial materials or activities become exposed to stormwater during the permit term, you must submit an NOI modification to reflect the change.

Section E. Discharge Information

You must confirm that you understand that the MSGP only authorizes the allowable stormwater discharges listed in Part 1.2.1 and the allowable non-stormwater discharges listed in Part 1.2.2. Any discharges not expressly authorized under the MSGP are not covered by the MSGP or the permit shield provision of the CWA Section 402(k) and they cannot become authorized or shielded by disclosure to EPA, state, or local authorities via the NOI to be covered by the permit or by any other means (e.g., in the SWPPP or during an inspection). If any discharges requiring NPDES permit coverage other than the allowable stormwater and non-stormwater discharges listed in Parts 1.2.1 and 1.2.2 will be discharged, they must either be eliminated or covered under another NPDES permit.

Depending on your industrial activities, your facility may be subject to federal effluent limitation guidelines which include additional effluent limits and monitoring requirements for your facility. Please review these requirements, described in Part 2.1.3 of the MSGP, and check any appropriate boxes on the NOI form.

You must identify all the discharge points from your facility that discharge stormwater. Each outfall must be assigned a unique 3-digit ID (e.g., 001, 002, 003). You must also provide the latitude and longitude for each discharge point from your facility. Indicate whether any discharge points are substantially identical to a discharge point already listed, and identify the discharge point it is identical to. For each unique discharge point you list, you must specify the name of the first water of the U.S. that receives stormwater directly from the discharge point and/or from the MS4 that the discharge point discharges to. You must specify whether any receiving waters that you discharge to are listed as "impaired" as defined in Appendix A, and the pollutants for which the water is impaired. You must also check identify any Total Maximum Daily Loads (TMDL) that have been completed for any of the waters of the U.S. that you discharge to. For each unique discharge point you must indicate whether the receiving water is saltwater or freshwater, and indicate whether discharges from the facility will enter into a water of the U.S that is designated as a Tier 2, Tier 2.5, or Tier 3 water. A list of Tier 2, 2.5, and 3 waters is provided as Appendix L. If the answer is "yes", name all waters designated as Tier 2, Tier 2.5, or Tier 3 to which the facility will discharge. Note that you are ineligible for coverage if you are a new discharger or a new source to waters designated as Tier 3 (outstanding national resource waters) for antidegradation purposes under 40 CFR 131.13(a)(3).

If your facility is in subsector K1 or G2, you must also indicate, for each unique discharge point, if the receiving water is still/standing (lentic) (e.g., a lake or impoundment) or flowing (lotic) (e.g., a river or stream).

You must also provide information about the discharge point latitude/longitude, including data source, the scale (if applicable), and the horizontal reference datum. See the instructions in Section D for more information about determining the latitude and longitude.

Identify whether your facility discharges into a Municipal Separate Storm Sewer System (MS4). If yes, provide the name of the MS4 operator. If you are uncertain of the MS4 operator, contact your local government for that information.

If you are subject to any benchmark monitoring requirements for metals (see the requirements applicable to your Sector(s) in Part 8 of the permit), indicate the hardness for your receiving water(s). See Appendix J of the permit for information about determining waterbody hardness.

If you are subject to benchmark monitoring requirements for hardness-dependent metals you must also answer whether your facility discharges into any saltwater receiving waters.

If our facility is located in EPA Region 10, indicate whether your facility will discharge to a federal CERCLA site listed in Appendix P. Note that if your facility will discharge into a federal CERCLA site listed in Appendix P, you are not eligible for coverage under this permit unless you notify the EPA Regional Office in advance and the EPA Regional Office authorizes overage under this permit after you have included adequate controls and/or procedures designed to ensure that discharges will not lead to recontamination of aquatic media at the CERCLA site such that your discharge will cause or contribute to an exceedance of a water quality standard.

Operators in New Mexico, indicate whether you anticipate the discharge of groundwater or spring water from your facility. If yes, you must provide information on flow and potential to encounter impacted ground or spring water such that there is a potential for contamination. You must also use the mapper tool located at https://gis.web.env.nm.gov/oem/ to determine if the groundwater sources listed are located near the anticipated source of groundwater or spring water such that there is potential for contamination. If potential for contamination exists, you must provide a summary of test data indicating the quality of the groundwater or spring water to be discharged.

Section F. Stormwater Pollution Prevention Plan (SWPPP) Information

All facilities eligible for coverage under this permit are required to prepare a SWPPP in advance of filing the NOI, in accordance with Part 6. Indicate whether the SWPPP has been prepared in advance of filing the NOI.

Indicate the contact information (name, phone, and e-mail) for the person who developed the SWPPP for this facility.

You identify how your SWPPP information will be made available, consistent with Part 5.4 and 7.3 of the permit. If you are making your SWPPP publicly available on a web site, check Option 1 and provide the appropriate Internet URL address. If you are not providing a URL, check Option 2 and provide the selected SWPPP information on this NOI form. You may copy and paste this information directly from your SWPPP.

Instructions for Completing EPA Form 3510-6

Notice of Intent (NOI) for Stormwater Discharges Associated with Industrial Activity Under the NPDES Multi-Sector General Permit

This Form Replaces Form 3510-6 (06/15) Form Approved OMB No. 2040-0300

Section G. Endangered Species Protection

Using the instructions in Appendix E, indicate the Part 1.1.4.5 criterion (i.e., A, B, C, D, or E) you are eligible under with regard to the protection of federally listed endangered and threatened species and designated critical habitat. A description of the basis for the criterion selected must also be provided.

If criterion B is selected, provide the NPDES ID (i.e., permit tracking number) for the other operator who has certified their eligibility under this permit. The NPDES ID was assigned when the operator received coverage under this permit.

If criterion C is selected, you must specify the federally-listed species or designated critical habitat that are located in the "action area" of the facility. You must also indicate under which scenario you determined you were eligible to submit your NOI under criterion C using Appendix E, and answer any corresponding questions.

If criterion D or E is selected, attach copies of any communications between you and the U.S. Fish and Wildlife Service and National Marine Fisheries Service to this NOI.

Section H. Historic Preservation

If the project is not located in Indian country lands, indicate whether the project is located on a property of religious or cultural significance to an Indian tribe, and if so, provide the name of the Indian tribe associated with the property. Use the instructions in Appendix F to complete the questions on the NOI form regarding historic preservation.

Section I. Certification

Certification statement and signature (see Section B.11 of Appendix B of the MSGP for more information). Enter certifier's printed name, title and email address. Sign and date the form. (CAUTION: An unsigned or undated NOI form will prevent the granting of permit coverage.) Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA). Include the name and title of the person signing the form and the date of signing.

An unsigned or undated NOI form will not be considered eligible for permit coverage.

Modifying Your NOI

If you have been granted a waiver from your Regional Office from electronic reporting, and if after submitting your NOI you need to correct or update any fields on this NOI form, you may do so by indicating changes on this same form.

Paperwork Reduction Act Notice

This collection of information is approved by OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. (OMB Control No. 2040-0300). Responses to this collection of information are mandatory (40 CFR 122.26). An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The public reporting and recordkeeping burden for this collection of information is estimated to be 4.1 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the Regulatory Support Division Director, U.S. Environmental Protection Agency (2821T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Submitting Your Form

If you have been granted a waiver from your Regional Office to submit a paper NOI form, you must send your NOI by mail to one of the following addresses:

For Regular U.S. Mail Delivery:
Stormwater Notice Processing Center
Mail Code 4203M, ATTN: 2021 MSGP Reports
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:
Stormwater Notice Processing Center
William Jefferson Clinton East Building - Room 7420
ATTN: 2021 MSGP Reports
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

Visit this website for instructions on how to submit electronically:
http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-eNOI- System-for-EPAs-MultiSector-General-Permit.cfm

Appendix H - Notice of Termination (NOT) Form

Part 7.2 requires you to use the NPDES eReporting Tool, or "NeT", to prepare and submit your No Exposure Certification (NEC) form. However, if you are given a waiver by the EPA Regional Office to use a paper NEC form, and you elect to use it, you must complete and submit the following form.

NPDES FORM 3510-7	EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NOTICE OF TERMINATION (NOT) FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY UNDER THE NPDES MULTI-SECTOR GENERAL PERMIT	OMB No. 2040-0300 Exp. Date: 3/31/2024

Submission of this Notice of Termination constitutes notice that the operator identified in Section C of this form is no longer authorized to discharge pursuant to the NPDES Multi-Sector General Permit (MSGP) from the facility identified in Section D of this form. All necessary information must be included on this form. Refer to the instructions at the end of this form.

1. Have you been granted a waiver from electronic reporting from the EPA Regional Office*? ☐ YES ☐ NO

If yes, check which waiver you have been granted, the name of the EPA Regional Office staff person who granted the waiver, and the date of approval:

Waiver granted: ☐ The owner/operator's headquarters is physically located in a geographic area (i.e., ZIP code or census tract) that is identified as under-served for broadband Internet access in the most recent report from the Federal Communications Commission.

☐ The owner/operator has issues regarding available computer access or computer capability

Name of EPA staff person that granted the waiver:

Date approval obtained: / /

*** Note: You are required to obtain approval from the applicable Regional Office prior to using this paper NOT form. If you have not obtained a waiver, you must file this form electronically using the NPDES eReporting Tool (NeT) at https://www.epa.gov/npdes/stormwater-discharges-industrial-activities**

1. NPDES ID:

2. Reason for Termination (check one only):

☐ A new owner or operator has taken over responsibility for the facility.

☐ You have ceased operations at the facility, there are not or no longer will be discharges of stormwater associated with industrial activity from the facility, and you have already implemented necessary sediment and erosion controls as required by Part 2.1.2.5.

☐ You are a Sector G, H, or J facility and you have met the applicable termination requirements.

☐ You obtained coverage under an individual or alternative general permit for all discharges required to be covered by an NPDES permit.

1. Operator Name:

2. Mailing Address:

Street:

City: State: ZIP Code: -

3. Phone: - - Ext.

4. E-mail:

1. Facility Name:

2, Facility Address:

Street:

City: State: ZIP Code: -

County or Similar Government Subdivision:

E. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

First Name, Middle, Last Name

Title:

Signature: _____ Date: / /

E-mail:

Instructions for Completing EPA Form 3510-7

Notice of Termination for Stormwater Discharges Associated with Industrial Activity Under the NPDES Multi-Sector General Permit

This Form Replaces Form 3510-7 (06/15) Form OMB No. 2040-0300

Who May File Notice of Termination (NOT) Form

Permittees currently covered by EPA's NPDES Stormwater Multi-Sector General Permit (MSGP or permit) must submit a Notice of Termination (NOT) within 30 days after one or more of the following conditions have been met:

- A new owner or operator has assumed responsibility for the facility;
- You have ceased operations at the facility and there are not or no longer will be discharges of stormwater associated with industrial activity from the facility and you have already implemented necessary sediment and erosion controls per Part 2.1.2.5;
- You are a Sector G, H, or J facility and you have met the applicable termination requirements; or
- You obtained coverage under an individual or alternative general permit for all discharges required to be covered by an NPDES permit.

See the MSGP Part 1.4.2 for more information.

Completing the Form

To complete this form, type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. Please submit original document with signature in ink - do not send a photocopied signature.

Section A. Approval to Use Paper NOT Form

You must indicate whether you have been granted a waiver from electronic reporting from the EPA Regional Office. Note that you are not authorized to use this paper NOT form unless the EPA Regional Office has approved its use. Where you have obtained approval to use this form, indicate the waiver that you have been granted, the name of the EPA Regional Office staff person who granted the waiver, and the date that approval was provided. See https://www.epa.gov/npdes/contact-us-stormwater for a list of EPA Regional Office contacts.

Section B. Permit Information

Enter the existing NPDES ID (i.e., NOI tracking number) assigned to your permit authorization.

Indicate your reason for submitting this NOT by checking the appropriate box. Check only one box (see MSGP Part 1.4.2 for more information).

Section C. Facility Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the facility described in this NOT. An operator of a facility is the legal entity that controls the operation of the facility. Refer to Appendix A of the permit for the definition of "operator". Provide the operator's mailing address, phone number, and e-mail.

Section D. Facility Information

Enter the official or legal name and complete street address, including city, state, ZIP code, and county or similar government subdivision of the facility. If the facility lacks a street address, indicate the general location of the facility (e.g., Intersection of State Highways 61 and 34). Complete facility information must be provided for termination of permit coverage to be valid.

Section E. Certification Information

All NOTs must be signed as follows:

For a corporation: By a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means: (i)a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA). Include the name and title of the person signing the form and the date of signing.

Include the name, title, and e-mail address of the person signing the form and the date of signing. An unsigned or undated NOT form will not be considered valid termination of permit coverage.

Paperwork Reduction Act Notice

This collection of information is approved by OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. (OMB Control No. 2040-0300). Responses to this collection of information are mandatory (40 CFR 122.26). An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The public reporting and recordkeeping burden for this collection of information is estimated to be 0.5 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the Regulatory Support Division Director, U.S. Environmental Protection Agency (2821T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Instructions for Completing EPA Form 3510-7

Notice of Termination for Stormwater Discharges Associated with Industrial Activity Under the NPDES Multi-Sector General Permit

This Form Replaces Form 3510-7 (06/15) Form OMB No. 2040-0300

Submitting Your Form

If you have been granted a waiver from your Regional Office to submit a paper NOT form, you must send your NOT by mail to one of the following addresses:

For Regular U.S. Mail Delivery:

Stormwater Notice Processing Center
Mail Code 4203M, ATTN: 2020 MSGP Reports
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:

Stormwater Notice Processing Center
William Jefferson Clinton East Building - Room 7420
ATTN: 2020 MSGP Reports
U.S. EPA
1201 Constitution Avenue, NW Washington, DC 20004

Visit this website for instructions on how to submit electronically: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities

Appendix I - Annual Report Form

Part 7.2 requires you to use the NPDES eReporting Tool, or "NeT", to prepare and submit your Annual Report. However, if you are given a waiver by the EPA Regional Office to use a paper annual report form, and you elect to use it, you must complete and submit the following form.

NPDES FORM 6100-28	EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 ANNUAL REPORT FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY UNDER THE NPDES MULTI-SECTOR GENERAL PERMIT	OMB No. 2040-0300 Exp. Date: 3/31/2024

A. Approval to Use Paper Annual Report Form

1. Have you been granted a waiver from electronic reporting from the EPA Regional Office*? ☐ YES ☐ NO

If yes, check which waiver you have been granted, the name of the EPA Regional Office staff person who granted the waiver, and the date of approval:

Waiver granted: ☐ The owner/operator's headquarters is physically located in a geographic area (i.e., ZIP code or census tract) that is identified as under-served for broadband Internet access in the most recent report from the Federal Communications Commission.

☐ The owner/operator has issues regarding available computer access or computer capability

Name of EPA staff person that granted the waiver:

Date approval obtained: / /

*** Note: You are required to obtain approval from the applicable EPA Regional Office prior to using this paper annual report form. If you have not obtained a waiver, you must file this form electronically using the NPDES eReporting Tool (NeT) at https://www.epa.gov/npdes/stormwater-discharges-industrial-activities**

B. Permit Information

1. NPDES ID:

C. Facility Information

1. Facility Name:

2. Facility Phone: - - Ext.

3. Facility Mailing Address:

Street:

City: State: ZIP Code: -

County or Similar Government Subdivision:

4. Point of Contact:

First Name, Middle Initial, Last Name

D. General Findings

1. Provide a summary of your past year's routine facility inspection documentation, including dates (see Part 3.1.6 of the permit). In addition, if you are an operator of an airport facility (Sector S) that is subject to the airport effluent limitations guidelines, and are complying with the MSGP Part 8.S.8.1 effluent limitation through the use of non-urea-containing deicers, provide a statement certifying that you do not use pavement deicers containing urea (e.g., "Urea was not used at [name of airport] for pavement deicing in the past year and will also not be used in 2021." (Note: Operators of airport facilities that are complying with Part 8.S.8.1 by meeting the numeric effluent limitation for ammonia do not need to include this statement.)

2. Provide a summary of your past year's quarterly visual assessment documentation, including dates (see Part 3.2.3 of the permit).

3. Provide a summary of your past year's corrective action and/or advanced implementation measures (AIM) documentation (See Part 5.1.3 of the permit). (Note: If corrective action is not yet completed at the time of submission of this annual report, you must describe the status of any outstanding corrective action(s).) Note that you must modify your SWPPP based on the corrective actions and deadlines required under Part 5. Also describe any incidents of noncompliance in the past year or currently ongoing, or if none, provide a statement that you are in compliance with the permit.

E. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

First Name, Middle, Last Name

Title:

Signature:

Date: / /

E-mail:

Instructions for Completing EPA Form 6100-28
Annual Report for Stormwater Discharges
Associated with Industrial Activity Under the NPDES Multi-Sector General Permit

This Form Replaces Form 6100-28 (06/15) OMB No. 2040-0300

Who Must File an Annual Report

Operators must submit an Annual Report to EPA electronically, per Part 7.4, by January 30th for each year of permit coverage containing information generated from the past calendar year.

Completing the Form

To complete this form, type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. Please submit original document with signature in ink - do not send a photocopied signature.

Section A. Approval to Use Paper Annual Report Form

You must indicate whether you have been granted a waiver from electronic reporting from the EPA Regional Office. Note that you are not authorized to use this paper form unless the EPA Regional Office has approved its use. Where you have obtained approval to use this form, indicate the waiver that you have been granted, the name of the EPA staff person who granted the waiver, and the date that approval was provided. See https://www.epa.gov/npdes/contact-us-stormwater for a list of EPA Regional Office contacts.

Section B. Permit Information

Provide the NPDES ID (i.e., NOI tracking number) assigned to your facility.

Section C. Facility Information

Enter the official or legal name, phone number, and complete street address, including city, state, ZIP code, and county or similar government subdivision, for the facility that is covered by the NPDES ID identified in Section B. If the facility lacks a street address, indicate the general location of the facility (e.g., Intersection of State Highways 61 and 34). Also provide a point of contact name for the facility.

Section D. General Findings

To complete this section you must provide the following information in your annual report:

1. A summary of your past year's routine facility inspection documentation, including inspection dates, required by Part 3.1.6 of the permit.
2. A summary of your past year's quarterly visual assessment documentation, including visual assessment dates, required by Part 3.2.3 of the permit.
3. Information copied or summarized from the corrective action and/or advanced implementation measures (AIM) documentation required per Part 5.1.3 (if applicable). If corrective action and/or advanced implementation measures are not yet completed at the time of submission of this Annual Report, you must describe the status of any outstanding corrective action(s)/advanced implementation measures. You must also describe any incidents of noncompliance in the past year or currently ongoing, or if none, provide a statement that you are in compliance with the permit.

Section E. Certification Information

The Annual Report must be signed by a person described below, or by a duly authorized representative of that person.

For a corporation: By a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA). Include the name and title of the person signing the form and the date of signing.

A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above;
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company, (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) and
3. The written authorization is submitted to the Director.

An unsigned or undated Annual Report form will be considered incomplete.

Paperwork Reduction Act Notice

This collection of information is approved by OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. (OMB Control No. 2040-0300). Responses to this collection of information are mandatory (40 CFR 122.26). An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The public reporting and recordkeeping burden for this collection of information is estimated to be 1 hour per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the Regulatory Support Division Director, U.S. Environmental Protection Agency (2821T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Instructions for Completing EPA Form 6100-28
Annual Report for Stormwater Discharges
Associated with Industrial Activity Under the NPDES Multi-Sector General Permit

This Form Replaces Form 6100-28 (06/15) OMB No. 2040-0300

Submitting Your Form	**For Overnight/Express Mail Delivery:**
If you have been granted a waiver from your Regional Office to submit a paper Annual Report form, you must send your Annual Report form by mail to one of the following addresses: **For Regular U.S. Mail Delivery:** Stormwater Notice Processing Center Mail Code 4203M, ATTN: 2020 MSGP Reports U.S. EPA 1200 Pennsylvania Avenue, NW Washington, DC 20460	Stormwater Notice Processing Center William Jefferson Clinton East Building - Room 7420 ATTN: 2020 MSGP Reports U.S. EPA 1201 Constitution Avenue, NW Washington, DC 20004 Visit this website for instructions on how to submit electronically: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities

Appendix J - Calculating Hardness in Freshwater Receiving Waters for Hardness Dependent Metals

Overview

For any sectors required to conduct benchmark samples for a hardness-dependent metal, EPA includes 'hardness ranges' from which benchmark values are determined. To determine which hardness range to use, you must collect data on the hardness of your receiving water(s). Once the site-specific hardness data have been collected, the corresponding benchmark value for each metal is determined by comparing where the hardness data fall within hardness ranges, as shown in Table 1. You only need to determine hardness for your discharges into freshwater as the benchmark values for metals do not vary for discharges to saline waters.

Table 1. ***Hardness Ranges to Be Used to Determine Benchmark Values for Cadmium, Lead, Nickel, Silver, and Zinc.***

All Units (mg/L)	Benchmark Values (µg/L, total)				
	Cadmium	Lead	Nickel	Silver	Zinc
0-24.99	0.49	14	145	0.37	37
25-49.99	0.73	24	203	0.80	52
50-74.99	1.2	45	314	1.9	80
75-99.99	1.7	69	418	3.3	107
100-124.99	2.1	95	518	5.0	132
125-149.99	2.6	123.	614	7.1	157
150-174.99	3.1	152	707	9.4	181
175-199.99	3.5	182	798	12	204
200-224.99	4.0	213	888	15	227
225-249.99	4.4	246	975	18	249
250+	4.7	262	1019	20	260

How to Determine Hardness for Hardness-Dependent Parameters in Freshwater.

You may select one of three methods to determine hardness, including: individual grab sampling, grab sampling by a group of operators which discharge to the same receiving water, or using third-party data. Regardless of the method used, you are responsible for documenting the procedures used for determining hardness values. The hardness value is required to be submitted to EPA with your Notice of Intent (NOI) so that your electronic Discharge Monitoring Report (DMR) which you will submit through Net-DMR will include the appropriate limits. You must retain all report and monitoring data in accordance with Part 7.8 of the permit. The three method options for determining hardness are detailed in the following sections.

i. Permittee Samples for Receiving Stream Hardness

This method involves collecting samples in the receiving water and submitting these to a laboratory for analysis. If you elect to sample your receiving water(s) and submit samples for analysis, hardness must be determined from the closest intermittent or perennial stream downstream of your point of discharge. The sample can be collected during either dry or wet

weather. Collection of the sample during wet weather is more representative of conditions during stormwater discharges; however, collection of in-stream samples during wet weather events may be impracticable or present safety issues.

Hardness must be sampled and analyzed using approved methods as described in 40 CFR Part 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants).

ii. Group Monitoring for Receiving Stream Hardness

You can be part of a group of permittees discharging to the same receiving waters and collect samples that are representative of the hardness values for all members of the group. In this scenario, hardness of the receiving water must be determined using 40 CFR Part 136 procedures and the results shared by group members. To use the same results, hardness measurements must be taken on a stream reach within a reasonable distance of the discharge points of each of the group members.

iii. Collection of Third-Party Hardness Data

You can submit receiving stream hardness data collected by a third party provided the results are collected consistent with the approved 40 CFR Part 136 methods. These data may come from a local water utility, previously conducted stream reports, TMDLs, peer reviewed literature, other government publications, or data previously collected by the permittee. Data should be less than 10 years old.

Water quality data for many of the nation's surface waters are available on-line or by contacting EPA or a state environmental agency. EPA's data system STORET, short for STOrage and RETrieval, is a repository for receiving water quality, biological, and physical data and is used by state environmental agencies, EPA and other federal agencies, universities, private citizens, and many others. Similarly, state environmental agencies and the U.S. Geological Service (USGS) also have water quality data available that, in some instances, can be accessed online. "Legacy STORET" codes for hardness include: 259 hardness, carbonate; 260 hardness, noncarbonated; and 261 calcium + magnesium, while more recent, "Modern STORET" data codes include: 00900 hardness, 00901 carbonate hardness, and 00902 noncarbonate hardness; or the discrete measurements of calcium (00915) and magnesium (00925) can be used to calculate hardness. Hardness data historically has been reported as "carbonate," "noncarbonate," or "Ca + Mg." If these are unavailable, then individual results for calcium (Ca) and magnesium (Mg) may be used to calculate hardness using the following equation:

$$\text{mg/L } CaCO_3 = 2.497 \text{ (Ca mg/L)} + 4.118 \text{ (Mg mg/L)}$$

When interpreting the data for carbonate and non-carbonate hardness, note that total hardness is equivalent to the sum of carbonate and noncarbonate hardness if both forms are reported. If only carbonate hardness is reported, it is more than likely that noncarbonate hardness is absent and the total hardness is equivalent to the available carbonate hardness.

Appendix K - No Exposure Certification (NEC) Form

Part 7.2 requires you to use the NPDES eReporting Tool, or "NeT", to prepare and submit your No Exposure Certification (NEC) form. However, if you are given a waiver by the EPA Regional Office to use a paper NEC form, and you elect to use it, you must complete and submit the following form.

NPDES FORM 3510-11	EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NO EXPOSURE CERTIFICATION (NEC) FOR EXCLUSION FROM EPA'S MULTI-SECTOR GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY (MSGP)	OMB No. 2040-0300 Exp. Date: 3/31/2024

Submission of this No Exposure Certification (NEC) constitutes notice that the operator identified in Section C does not require permit authorization under EPA's Stormwater Multi Sector General Permit for its stormwater discharges associated with industrial activity from the facility identified in Section D of this form due to the existence of a condition of no exposure.

A condition of no exposure exists at an industrial facility when all industrial materials and activities are protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product. A storm resistant shelter is not required for the following industrial materials and activities:

- drums, barrels, tanks, and similar containers that are tightly sealed, provided those containers are not deteriorated and do not leak. "Sealed" means banded or otherwise secured and without operational taps or valves;
- adequately maintained vehicles used in material handling; and
- final products, other than products that would be mobilized in stormwater discharges (e.g., rock salt).

A NEC must be provided for each facility qualifying for the no exposure exclusion. In addition, the exclusion from NPDES permitting is available on a facility-wide basis only, not for individual outfalls. If any industrial activities or materials are or will be exposed to precipitation, the facility is not eligible for the no exposure exclusion.

By signing and submitting this NEC form, the operator in Section C is certifying that a condition of no exposure exists at its facility or site, and is obligated to comply with the terms and conditions of 40 CFR 122.26(g).

A. Approval to Use Paper NEC Form

1. Have you been granted a waiver from electronic reporting from the EPA Regional Office*? ☐ YES ☐ NO

If yes, check which waiver you have been granted, the name of the EPA Regional Office staff person who granted the waiver, and the date of approval:

Waiver granted: ☐ The owner/operator's headquarters is physically located in a geographic area (i.e., ZIP code or census tract) that is identified as under-served for broadband Internet access in the most recent report from the Federal Communications Commission.

☐ The owner/operator has issues regarding available computer access or computer capability

Name of EPA staff person that granted the waiver: _____

Date approval obtained: ___ / ___ / ____

*** Note: You are required to obtain approval from the applicable EPA Regional Office prior to using this paper NEC form. If you have not obtained a waiver, you must file this form electronically using the NPDES eReporting Tool (NeT) at https://www.epa.gov/npdes/stormwater-discharges-industrial-activities**

B. Reason for Submission

Select the purpose for filling out this form (check only 1).

☐ **To obtain a new NEC.** Fill in Sections C, D, E and F.

☐ **To discontinue an existing NEC.** Select this option if you would like to discontinue an existing NEC because your facility is no longer subject to regulation under 40 CFR 122.26 (e.g., the facility has ceased the industrial activity that necessitated the NEC)*. Provide the following information and fill out Section G.

Provide the existing NPDES ID for the NEC that you would like to discontinue: _____

1. Are you a new discharger or a new source as defined in Appendix A? ☐ YES ☐ NO (If yes, skip to Part C of this form).

*** Note that if your facility no longer qualifies for the NEC because permit coverage is required for exposed industrial materials or activities, you should not check this box, and must instead file for coverage under the Multi-Sector General Permit (MSGP) or an individual permit. Your NEC will be automatically discontinued after you obtain coverage under the MSGP or an individual permit.**

C. Facility Operator Information

1. Operator Name: _____

2. Mailing Address:

Street: _____

City: _____ State: ___ ZIP Code: _____ - _____

3. Phone: ___ - ___ - ____ Ext. ____

4. E-mail: _____

5. Operator Point of Contact Information:

First Name, Middle Initial, Last Name

Title:

D. Facility Information

1. Facility Name:

2, Facility Address:

Street/Location:

City: State: ZIP Code: -

County or Similar Government Subdivision:

3. Latitude/Longitude for the facility:

Latitude: __ __ . __ __ __ __ ° N (decimal degrees) Longitude: __ __ __ . __ __ __ __ ° W (decimal degrees)

Latitude/Longitude Data Source: ☐ Maps ☐ GPS ☐ Other _____

If you used a USGS topographic map, what was the scale? _____

Horizontal Reference Datum: ☐ NAD 27 ☐ NAD 83 ☐ WGS 84

4. Is your facility located on Indian Country lands? ☐ YES ☐ NO

If yes, provide the name of the Indian tribe associated with the area of Indian country (including name of Indian reservation, if applicable):

_____

5. Are you a "federal operator" as defined in Appendix A? ☐ YES ☐ NO

6. What is the ownership type of the facility? ☐ Federal Facility (U.S. Government) ☐ Privately Owned Facility ☐ Municipality ☐ County Government ☐ Corporation ☐ State Government ☐ Tribal Government ☐ School District ☐ District ☐ Mixed Ownership (e.g., Public/Private) ☐ Municipal or Water District

7. Have stormwater discharges from your facility been covered previously under an NPDES permit? ☐ YES ☐ NO

If yes, provide the NPDES ID if you had coverage under EPA's MSGP or the NPDES permit number if you had coverage under an EPA individual permit: _____

8. Has your facility previously been covered by a no exposure exclusion? ☐ YES ☐ NO

If yes, provide the NPDES ID for your previous no exposure exclusion: _____

9. Identify the 4-digit Standard Industrial Classification (SIC) code or 2-letter Activity Code that best represents the products produced or services rendered for which your facility is primarily engaged, as defined in the MSGP, and the applicable sector and subsector of your primary industrial activity (See Appendix D):

☐ **Primary SIC Code** **OR** ☐ **Primary Activity Code**

10. Total size of site associated with industrial activity: _____ (to the nearest quarter acre)

11. Have you paved or roofed over a formerly exposed, pervious area in order to qualify for the no exposure exclusion? ☐ YES ☐ NO

If yes, please indicate approximately how much area was paved or roofed over. Completing this question does not disqualify you for the no exposure exclusion. However, your permitting authority may use this information in considering whether stormwater discharges from your site are likely to have an adverse impact on water quality, in which case you could be required to obtain permit coverage.

☐ Less than one (1) acre ☐ One (1) to five (5) acres ☐ More than five (5) acres

E. Exposure Checklist

Are any of the following materials or activities exposed to precipitation, now or in the foreseeable future?

(Please check either "Yes" or "No" in the appropriate box.) **If you answer "Yes" to any of these questions, you are not eligible for the no exposure exclusion.**

	Yes	No
Using, storing or cleaning industrial machinery or equipment, and areas where residuals from using, storing or cleaning industrial machinery or equipment remain and are exposed to stormwater	☐	☐
Materials or residuals on the ground or in stormwater inlets from spills/leaks	☐	☐
Materials or products from past industrial activity	☐	☐
Material handling equipment (except adequately maintained vehicles)	☐	☐
Materials or products during loading/unloading or transporting activities	☐	☐
Materials or products stored outdoors (except final products intended for outside use [e.g., new cars] where exposure to stormwater does not result in the discharge of pollutants)	☐	☐
Materials contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers	☐	☐
Materials or products handled/stored on roads or railways owned or maintained by the discharger	☐	☐
Waste material (except waste in covered, non-leaking containers [e.g., dumpsters])	☐	☐
Application or disposal of process wastewater (unless otherwise permitted)	☐	☐
Particulate matter or visible deposits of residuals from roof stacks and/or vents not otherwise regulated (i.e., under an air quality control permit) and evident in the stormwater outflow	☐	☐

F. Certification Information

I certify under penalty of law that I have read and understand the eligibility requirements for claiming a condition of "no exposure" and obtaining an exclusion from NPDES stormwater permitting.

I certify under penalty of law that there are no discharges of stormwater contaminated by exposure to industrial activities or materials from the industrial facility or site identified in this document (except as allowed under 40 CFR 122.26(g)(2)).

I understand that I am obligated to submit a NEC form once every five years to the NPDES permitting authority and, if requested, to the operator of the local municipal separate storm sewer system (MS4) into which the facility discharges (where applicable). I understand that I must allow the NPDES permitting authority, or MS4 operator where the discharge is into the local MS4, to perform inspections to confirm the condition of no exposure and to make such inspection reports publicly available upon request. I understand that I must obtain coverage under an NPDES permit prior to any point source discharge of stormwater from the facility.

Additionally, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

First Name, Middle, Last Name:

Title:

Signature: _____ Date: / /

E-mail:

G. Discontinuation of NEC Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

First Name, Middle, Last Name

Title:

Signature: _____ Date: / /

E-mail:

Instructions for Completing EPA Form 3510-11

No Exposure Certification (NEC) for Exclusion from Stormwater Discharges Associated with Industrial Activity Under the NPDES Multi-Sector General Permit

This Form Replaces Form 3510-11 (06/15) OMB No. 2040-0300

Who May File a No Exposure Certification (NEC) Form

Federal law at 40 CFR Part 122.26 prohibits point source discharges of stormwater associated with industrial activity to waters of the U.S. without a National Pollutant Discharge Elimination System (NPDES) permit. However, NPDES permit coverage is not required for discharges of stormwater associated with industrial activities identified at 40 CFR 122.26(b)(14)(i)-(ix) and (xi) if the discharger can certify that a condition of "no exposure" exists at the industrial facility or site.

Stormwater discharges from construction activities identified in 40 CFR 122.26(b)(14)(x) and (b)(15) are not eligible for the no exposure exclusion.

Obtaining and Maintaining the No Exposure Exclusion

This form is used to certify that a condition of no exposure exists at the industrial facility or site described herein. This certification is only applicable in jurisdictions where EPA is the NPDES permitting authority and must be re-submitted at least once every five years.

The industrial facility operator must maintain a condition of no exposure at its facility or site in order for the no exposure exclusion to remain applicable. If conditions change resulting in the exposure of materials and activities to stormwater, the facility operator must obtain coverage under an NPDES stormwater permit immediately.

Completing the Form

You must type or print, using uppercase letters, in appropriate areas only. Enter only one character per space (i.e., between the marks). Abbreviate if necessary to stay within the number of characters allowed for each item. Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. Please submit original document with signature in ink - do not send a photocopied signature. One form must be completed for each facility or site for which you are seeking to certify a condition of no exposure. **Please make sure you have addressed all applicable questions and have made a photocopy for your records before sending the completed form to the above address.**

Section A. Approval to Use Paper NEC Form

You must indicate whether you have been granted a waiver from electronic reporting from the EPA Regional Office. Note that you are not authorized to use this paper NEC form unless the EPA Regional Office has approved its use. Where you have obtained approval to use this form, indicate the waiver that you have been granted, the name of the EPA Regional Office staff person who granted the waiver, and the date that approval was provided. See https://www.epa.gov/npdes/contact-us-stormwater for a list of EPA Regional Office contacts.

Section B. Reason for Submission

You must check your reason for submitting this form. You may submit this form for obtaining a new NEC, for renewing a previous NEC, or for discontinuing an existing NEC (for facilities that no longer need the exclusion from permit coverage for industrial stormwater discharges).

Section C. Facility Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the facility described in this certification form. An operator of a facility is the legal entity that controls the operation of the facility. Refer to Appendix A of the MSGP for the definition of "operator". Provide the operator's mailing address, phone number, and e-mail. Correspondence for the NEC will be sent to this address. Also provide the name and title for the operator point of contact (note that the point of contact name may be the same as the operator name).

Section D. Facility Information

Enter the official or legal name and complete street address, including city, state, ZIP code, and county or similar government subdivision of the facility. If the facility lacks a street address, indicate the general location of the facility (e.g., Intersection of State Highways 61 and 34). Complete facility information must be provided for permit coverage to be granted.

Provide the latitude and longitude of your facility in decimal degrees format. The latitude and longitude of your facility can be determined in several different ways, including through the use of global positioning system (GPS) receivers and U.S. Geological Survey (USGS) topographic or quadrangle maps. Refer to http://transition.fcc.gov/mb/audio/bickel/DDDMMSS-decimal.html/ for assistance in providing the proper latitude/longitude format. For consistency, EPA requests that measurements be taken form the approximate center of the facility. Specify which method you used to determine latitude and longitude. If a USGS topographic map is used, specify the scale of the map used. Enter the horizontal reference datum for your latitude and longitude. The horizontal reference datum used on USGS topographic maps is shown on the bottom left corner of USGS topographic maps; it is also available for GPS receivers.

Indicate whether the facility is on Indian country lands, and if so, provide the name of the Indian tribe associated with the area of Indian country (including name of Indian reservation, if applicable).

Indicate whether you are a "federal operator" as defined in Appendix A of the MSGP. Also check the facility's ownership type.

Indicate whether the facility was previously covered under an NPDES stormwater permit. If so, include the NPDES ID (i.e., NOI tracking number).

List the four-digit Standard Industrial Classification (SIC) code or two character activity code that best describes the primary industrial activities performed by your facility.

Enter the total size of the site associated with industrial activity in acres.

Check "Yes" or "No" as appropriate to indicate whether you have paved or roofed over a formerly exposed, pervious area (i.e., lawn, meadow, dirt or gravel road/parking lot) in order to qualify for no exposure. If yes, also indicate approximately how much area was paved or roofed over and is now impervious area.

Instructions for Completing EPA Form 3510-11

No Exposure Certification (NEC) for Exclusion from Stormwater Discharges Associated with Industrial Activity Under the NPDES Multi-Sector General Permit

This Form Replaces From 3510-11 (06/15) Form OMB No. 2040-0300

Section E. Exposure Checklist

Check "Yes" or "No" as appropriate to describe the exposure condition at your facility. If you answer "Yes" to **ANY** of the questions in this section, a potential for exposure exists at your site and you cannot certify to a condition of no exposure. You must obtain (or already have) coverage under an NPDES stormwater permit. After obtaining permit coverage, you can institute modifications to eliminate the potential for a discharge of stormwater exposed to industrial activity, and then certify to a condition of no exposure.

Section F and G. Certification and Discontinuation of NEC Information

The NEC form must be signed as follows:

For a corporation: By a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA). Include the name and title of the person signing the form and the date of signing.

Include the name, title, and e-mail address of the person signing the form and the date of signing.

An unsigned or undated NEC form will not be considered valid.

Paperwork Reduction Act Notice

This collection of information is approved by OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. (OMB Control No. 2040-0300). Responses to this collection of information are mandatory (40 CFR 122.26). An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The public reporting and recordkeeping burden for this collection of information is estimated to be 45 minutes per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the Regulatory Support Division Director, U.S. Environmental Protection Agency (2821T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Submitting Your Form

If you have been granted a waiver from your Regional Office to submit a paper NEC form, you must send your NEC form by mail to one of the following addresses:

For Regular U.S. Mail Delivery:

Stormwater Notice Processing Center
Mail Code 4203M, ATTN: MSGP No Exposure
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:

Stormwater Notice Processing Center
William Jefferson Clinton East Building - Room 7420
ATTN: MSGP No Exposure
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

Visit this website for instructions on how to submit electronically: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities

Appendix L - List of Tier 3, Tier 2, and Tier 2.5 Waters

EPA's MSGP has special requirements for discharges to waters designated by a state or tribe as Tier 2/2.5 or Tier 3 for antidegradation purposes under 40 CFR 131.12(a). See Parts 1.1.6.2 and 1.1.7.

The list below is provided as a resource for operators who must determine whether they discharge to a Tier 2/2.5 or Tier 3 water. Only Tier 2/2.5 or Tier 3 waters specifically identified by a water quality standard authority (e.g., a state, territory, or tribe) are identified in the table below. Many authorities evaluate the existing and protected quality of the receiving water on a pollutant-by-pollutant basis and determine whether water quality is better than the applicable criteria that would be affected by a new discharger or a new source or an increase in an existing discharge of the pollutant. In instances where water quality is better, the authority may choose to allow lower water quality, where lower water quality is determined to be necessary to support important social and economic development. Permittees are not required to identify those waters which are evaluated on an individual basis.

<table>
<tr><th>Permit Number</th><th colspan="2">Areas of Coverage/Where EPA Is Permitting Authority</th></tr>
<tr><td rowspan="5">MAR050000</td><td colspan="2">Commonwealth of Massachusetts, except Indian Country lands</td></tr>
<tr><td colspan="2">Tier 2, Tier 2.5, and 3 waters are identified and listed in the Massachusetts Water Quality Standards 314 CMR 4.00. Surface water qualifiers that correspond with Tier classifications are defined at 314 CMR 4.06(1)(d) and listed in tables and figures at the end of 314 CMR 4.06. See MassDEP's web page at: https://www.mass.gov/doc/314-cmr-400-surface-water-quality-standards/download.</td></tr>
<tr><td>Tier 2</td><td>Listed as "High Quality Waters", and all wetlands that are not designated as an Outstanding Resource Water</td></tr>
<tr><td>Tier 2.5</td><td>Listed as "Outstanding Resource Water", "Public Water Supply", "Tributary to Public Water Supply", all wetlands bordering Outstanding Resource Waters, and vernal pools</td></tr>
<tr><td>Tier 3</td><td>Defined as "Special Resource Water". Note: No waters have been defined as a Special Resource Water as of the issuance of this permit.</td></tr>
</table>

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
NHR050000	**State of New Hampshire**	
	Tier 2	All waters are Tier 2 except where listed as impaired for the most current approved assessment cycle. GIS maps are available in cycle specific Surface Water Quality Viewer at:https://nhdes.maps.arcgis.com/apps/webappviewer/index.html?id=aa5a11f8b8c341058fc031701a2fb3c9 and, using the NHDES Assessment Unit ID assigned to the waterbody, referencing the appropriate Watershed Report Card (based on the 305(b)/303(d) Assessment). Waterbodies included in Categories "4A-*" or "5-*" are impaired and therefore not designated as Tier 2 waters. The assessment status of waterbodies is also included in the biennial 303(d) Lists available in spreadsheet and PDF format at: https://www.des.nh.gov/resource-center/publications?keys=303%28d%29+List&purpose=&subcategory=Watershed+Management. As of Effective Date of this Permit, the following assessment cycles are approved for the waterbodies indicated (however, operators must check for any more recently approved cycles at the time of filing an NOI; i.e., the 2020 303(d) List will apply to all waterbodies once approved): For discharges into the following waters, reference the 2012 305(b)/303(d) List: Little Bay, Bellamy River, Upper Piscataqua River, Portsmouth Harbor, Little Harbor/Back Channel and Great Bay assessment zones; and the Upper Portsmouth Harbor, Great Bay Prohib SZ2, and Great Bay-Cond Appr assessment units. For discharges into all other waters, reference the 2018 303(d) List available at: https://www.des.nh.gov/resource-center/publications?keys=2018+status&purpose=&subcategory=Watershed+Management Waterbodies not identified on the list or map are Tier 2. There is no list of Tier 2 or 2.5 waters in New Hampshire. New dischargers and new sources should contact David J. Gray (EPA Region 1's MSGP coordinator at gray.davidj@epa.gov).
	Tier 2.5	There is no list of Tier 2 or 2.5 waters in New Hampshire. New dischargers and new sources should contact David J. Gray (EPA Region 1's MSGP coordinator at gray.davidj@epa.gov).

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
	Tier 3	Listed as an Outstanding Resource Water (ORW). Env-Ws 1708.04(a) describes that surface waters of national forests and surface waters designated as "natural" under RSA 483:7-a, I shall be considered outstanding resource waters (ORW). A list of ORWs/Tier 3 waters is available at: https://www.des.nh.gov/resource-center/publications?keys=cgp&purpose=&subcategory=Watershed+Management. If so indicated on this list, review the NHDES OneStop Data Mapper at: https://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx. Waterbodies not identified on the list or map are not ORWs. Env-Wq 1708.04(a) Surface waters of national forests and surface waters designated as "natural" under RSA 483:7-a, shall be considered outstanding resource waters (ORW). The New Hampshire waters listed as ORW can be found along with a list of impaired waters at https://www.des.nh.gov/organization/divisions/water/stormwater/documents/impaired-tmdl-orw-listcgp-msgp.xlsx. New dischargers and new sources should contact David J. Gray (EPA Region 1's MSGP coordinator at gray.davidj@epa.gov).
PRR050000	**Commonwealth of Puerto Rico**	
	Tier 3	Tier III waters are those which are classified as either Class SA or Class SE. Class SA waters are defined as "Coastal waters and estuarine waters of high quality and/or exceptional ecological or recreational value whose existing characteristics shall not be altered, except by natural causes, in order to preserve the existing natural phenomena." Class SA waters include bioluminescent lagoons and bays such as La Parguera and Monsio José on the Southern Coast, Bahía de Mosquito in Vieques, and any other coastal or estuarine waters of exceptional quality of high ecological value or recreational which may be designated by Puerto Rico, through Resolution, as requiring this classification for protection of the waters. Class SE waters are defined as "Surface waters and wetlands of exceptional ecological value, whose existing characteristics should not be altered in order to preserve the existing natural phenomena." Class SE waters include Laguna Tortuguero, Laguna Cartagena and any other surface water bodies of exceptional ecological value as may be designated by Puerto Rico through Resolution.
DCR050000	**District of Columbia**	
	Tier 2/2.5	Rule 1102.4 SPECIAL WATERS OF THE DISTRICT OF COLUMBIA (SWDC): Any segment or segments of the surface waters of the District that are of water quality better than needed for the current use or have scenic or aesthetic importance shall be designated as Special Waters of the District of Columbia (SWDC). Rock Creek and its tributaries and Battery Kemble Creek and its tributaries are considered Special Waters of the District of Columbia (SWDC) under its antidegradation program.
MNR05000I	**Fond du Lac Band of MN Chippewa**	
	Tier 3	Six lakes are presently identified as Tier 3: (1) Dead Fish, (2) Jaskari, (3) Miller (Mud), (4) Perch, (5) Rice Portage, (6) Wild Rice.

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
	Grand Portage Band of MN Chippewa	
	Tier 2/2.5	All waters, not already classified as Tier 3, are high quality Tier 2 waters. (see Grand Portage Reservation Water Quality Standards, Section VI & VII, Pages 14-16).
	Tier 3	"The portion of Lake Superior north of latitude 47 degrees, 57 minutes, 13 seconds, east of Hat Point, south of the Minnesota-Ontario boundary, and west of the Minnesota-Michigan boundary." (see Section VII, Page 16).
WIR05000I	**Lac du Flambeau Band of the Lake Superior Chippewa**	
	Tier 2	All named waters, including wetlands, not specified under an antidegradation classification.
	Tier 2.5	Bills Lake, Birch Lake, Bobidosh Lake, Bog Lake (SE SE Sec. 31, T40NR6E), Bolton Lake, Broken Bow Lake, Chewalah Lake, Clear Lake (Sec. 2, T39NR4E), Corn Great, Great, Corn Lake, Little "Least/Lesser", Crawling Stone Lake, Big, Crawling Stone Lake, Little, Crescent Lake, Crooked Lake, Big, David Lake, Ellerson Lake, Middle, Ellerson Lake, West, Elsie Lake "Boundary Lake", Fat Lake, Fence Lake, Gresham
		Creek, Green Lake (NW NW Sec. 19, T41R6E), Grey Lake, Gunlock Lake, Haskell Lake, Headflyer Lake (Sec. 19, T41NR5E), Highway Lake (NW NW Sec. 19, T41NR5E), Horsehead Lake (SE SW Sec. 9, T40NR5E), Hutton's Creek, Ike Walton Lake, Lily Lake (SE SW Sec. 35, T40NR5E), Little Ten Lake, Lodge Lake "L. Rice" (NW NW Sec. 8, T41NR6E), Lucy Lake, Mindys Lake (Sec. 8, T40NR5E), Minette Lake, Mitten Lake, Monk's Lake (Sec. 13, T40NR5E), Moving Cloud Lake, Mud Creek, Muskesin Lake, Patterson Lake, Placid Twin Lake (North), Placid Twin Lake (South), Plummer Lake, Poupart Lake, Prairie Lake (NE SW Sec. 13, T40NR4E), Raven Lake, Ross Allen Lake, Sand Lake, Little, Scott Lake (Sec. 22, T40N, R4E), Shishebogama Lake, Signal Lake, Snort Lake (Sec. 5, T41N, R6E), Spring Lake "Jerms", Squirrel Lake, Statenaker Lake "Hollow", Stearns Lake "Hourglass", Sugarbush "Hidden Lake" (NW NW Sec. 17, T41NR5E), Sugarbush Creek, Sugarbush Lake, Little, Sugarbush Lake, Lower, Sugarbush Lake, Middle, Sugarbush Lake, Upper, Sunfish Lake, Tippecanoe Lake, Tomahawk River, To-To Tom Lake, Toulish Lake, Trout River, Warrior Lake, White Sand Lake, Whitefish Lake "Cattail Lake" (Sec. 34, T40N5R), Wishow Lake, Wyandock Lake
	Tier 3	Bear River (1st bridge to Reservation boundary), Big Springs (Sec. 25, T40NR4E), Black Lake, Cranberry Lake, Doud Lake, Eagle Lake, Gene Lake, Johnson Springs, Little Trout Lake, Lost Lake (Sect. 1, T41NR4E), Mishonagon Creek, Munnomin (Jesse, Duck) Lake, Negani (Hegani) Lake, Reservation Line Lake, Spring Creek, Tank Lake, Thomas Lake, Wild Rice Lake, Zee Lake
	Mole Lake Band of the Lake Superior Tribe of the Chippewa Indians, Sokaogon Chippewa Community	
	Tier 2.9	One Tribal Water, Wetland 22, is classified as Exceptional High Quality Water (EHQW). It is a high-quality water body of significant cultural, religious, social, ecological and recreational attributes.
	Tier 3	All waters in the Sokaogon Chippewa Community (WI) as classified as Tier 3, with one exception (Wetland 22).

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
COR0500I	**State of Colorado**	
	Ute Mountain Ute Tribe	
	Tier 3	(2010 Proposed) Designations: (1) Ute Spring and unnamed creek from Ute Spring downstream within Section 12, TWP35N R18W (Colorado). (2) Allen Canyon Creek, Sections 17, 20, 29, 30, 31, TWP 35S, R21E (Utah) (3) "Lopez" Spring and unnamed creek tributary to and downstream from the spring, within Section 35, TWP 34N, R18W
NMR050000	**State of New Mexico**	
	Tier 3	(1) Rio Santa Barbara, including the west, middle and east forks from their headwaters downstream to the boundary of the Pecos Wilderness; and (2) the waters within the United States forest service Valle Vidal special management unit including: (a) Rio Costilla, including Comanche, La Cueva, Fernandez, Chuckwagon, Little Costilla, Holman, Gold, Grassy, LaBelle and Vidal creeks, from their headwaters downstream to the boundary of the United States forest service Valle Vidal special management unit; (b) Middle Ponil creek, including the waters of Greenwood Canyon, from their headwaters downstream to the boundary of the Elliott S. Barker wildlife management area; (c) Shuree lakes; (d) North Ponil creek, including McCrystal and Seally Canyon creeks, from their headwaters downstream to the boundary of the United States forest service Valle Vidal special management unit; and (e) Leandro creek from its headwaters downstream to the boundary of the United States forest service Valle Vidal special management unit. (3) the named perennial surface waters of the state, identified in Subparagraph (a) below, located within United States department of agriculture forest service wilderness. Wilderness are those lands designated by the United States congress as wilderness pursuant to the Wilderness Act. Wilderness areas included in this designation are the Aldo Leopold wilderness, Apache Kid wilderness, Blue Range wilderness, Chama River Canyon wilderness, Cruces Basin wilderness, Dome wilderness, Gila wilderness, Latir Peak wilderness, Pecos wilderness, San Pedro Parks wilderness, Wheeler Peak wilderness, and White Mountain wilderness. (a) The following waters are designated in the Rio Grande basin: (i) in the Aldo Leopold wilderness: Byers Run, Circle Seven creek, Flower canyon, Holden Prong, Indian canyon, Las Animas creek, Mud Spring canyon, North Fork Palomas creek, North Seco creek, Pretty canyon, Sids Prong, South Animas canyon, Victorio Park canyon, Water canyon; (ii) in the Apache Kid wilderness Indian creek and Smith canyon; (iii) in the Chama River Canyon wilderness: Chavez canyon, Ojitos canyon, Rio Chama; (iv) in the Cruces Basin wilderness: Beaver creek, Cruces creek, Diablo creek, Escondido creek, Lobo creek, Osha creek; (v) in the Dome wilderness: Capulin creek, Medio creek, Sanchez canyon/creek; (vi) in the Latir Peak wilderness: Bull creek, Bull Creek lake, Heart lake,

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
		Lagunitas Fork, Lake Fork creek, Rito del Medio, Rito Primero, West Latir creek; (vii) in the Pecos wilderness: Agua Sarca, Hidden lake, Horseshoe lake (Alamitos), Jose Vigil lake, Nambe lake, Nat lake IV, No Fish lake, North Fork Rio Quemado, Rinconada, Rio Capulin, Rio de las Trampas (Trampas creek), Rio de Truchas, Rio Frijoles, Rio Medio, Rio Molino, Rio Nambe, Rio San Leonardo, Rito con Agua, Rito Gallina, Rito Jaroso, Rito Quemado, San Leonardo lake, Santa Fe lake, Santa Fe river, Serpent lake, South Fork Rio Quemado, Trampas lake (East), Trampas lake (West); iii) in the San Pedro Parks wilderness: Agua Sarca, Cañon Madera, Cave creek, Cecilia Canyon creek, Clear creek (North SPP), Clear creek (South SPP), Corralitos creek, Dove creek, Jose Miguel creek, La Jara creek, Oso creek, Rio Capulin, Rio de las Vacas, Rio Gallina, Rio Puerco de Chama, Rito Anastacio East, Rito Anastacio West, Rito de las Palomas, Rito de las Perchas, Rito de los Pinos, Rito de los Utes, Rito Leche, Rito Redondo, Rito Resumidero, San Gregorio lake; (ix) in the Wheeler Peak wilderness: Black Copper canyon, East Fork Red river, Elk lake, Horseshoe lake, Lost lake, Sawmill creek, South Fork lake, South Fork Rio Hondo, Williams lake. (b) The following waters are designated in the Pecos River basin: (i) in the Pecos wilderness: Albright creek, Bear creek, Beatty creek, Beaver creek, Carpenter creek, Cascade canyon, Cave creek, El Porvenir creek, Hollinger creek, Holy Ghost creek, Horsethief creek, Jack's creek, Jarosa canyon/creek, Johnson lake, Lake Katherine, Lost Bear lake, Noisy brook, Panchuela creek, Pecos Baldy lake, Pecos river, Rio Mora, Rio Valdez, Rito Azul, Rito de los Chimayosos, Rito de los Esteros, Rito del Oso, Rito del Padre, Rito las Trampas, Rito Maestas, Rito Oscuro, Rito Perro, Rito Sebadilloses, South Fork Bear creek, South Fork Rito Azul, Spirit lake, Stewart lake, Truchas lake (North), Truchas lake (South), Winsor creek; (ii) in the White Mountain wilderness: Argentina creek, Aspen creek, Bonito creek, Little Bonito creek, Mills canyon/creek, Rodamaker creek, South Fork Rio Bonito, Turkey canyon/creek. (c) The following waters are designated in the Gila River basin: (i) in the Aldo Leopold wilderness: Aspen canyon, Black Canyon creek, Bonner canyon, Burnt canyon, Diamond creek, Falls canyon, Fisherman canyon, Running Water canyon, South Diamond creek; (ii) in the Gila wilderness: Apache creek, Black Canyon creek, Brush canyon, Canyon creek, Chicken Coop canyon, Clear creek, Cooper canyon, Cow creek, Cub creek, Diamond creek, East Fork Gila river, Gila river, Gilita creek, Indian creek, Iron creek, Langstroth canyon, Lilley canyon, Little creek, Little Turkey creek, Lookout canyon, McKenna creek, Middle Fork Gila river, Miller Spring canyon, Mogollon creek, Panther canyon, Prior creek, Rain creek, Raw Meat creek, Rocky canyon, Sacaton creek, Sapillo creek, Sheep Corral canyon, Skeleton canyon, Squaw creek, Sycamore canyon, Trail canyon, Trail creek, Trout creek, Turkey creek, Turkey Feather creek, Turnbo canyon, West Fork Gila river, West Fork Mogollon creek, White creek, Willow creek, Woodrow canyon. (d) The following waters are designated in the Canadian River basin: in the Pecos wilderness Daily creek, Johns canyon, Middle Fork Lake of Rio de la Casa, Middle Fork Rio de la Casa, North Fork Lake of Rio de la Casa, Rito de Gascon, Rito San Jose, Sapello river, South Fork Rio de la

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
		Casa, Sparks creek (Manuelitas creek). (e) The following waters are designated in the San Francisco River basin: (i) in the Blue Range wilderness: Pueblo creek; in the Gila wilderness: Big Dry creek, Lipsey canyon, Little Dry creek, Little Whitewater creek, South Fork Whitewater creek, Spider creek, Spruce creek, Whitewater creek. (f) The following waters are designated in the Mimbres Closed basin: in the Aldo Leopold wilderness Corral canyon, Mimbres river, North Fork Mimbres river, South Fork Mimbres river. (g) The following waters are designated in the Tularosa Closed basin: in the White Mountain wilderness Indian creek, Nogal Arroyo, Three Rivers. (h) The wetlands designated are identified on the maps and list of wetlands within United States forest service wilderness areas designated as outstanding national resource waters published at the New Mexico state library and available on the department's website.
CAR05000I	**Hualapai Tribe**	
	Tier 3	Spencer, Meriwhitica, Willow Spring, Upper Milkweed Spring, Bridge Canyon, Travertine Spring, Travertine Falls, Diamond Creek, Diamond Creek Spring, Blue Mountain, Metuck, Peach Springs Spring, Westwater, Clay Tank, Hockey Puck, Pocamote Spring, Mohawk Spring, Granite Spring, Three Spring, Warm Spring, Honga Spring, National Canyon Spring, National Canyon, Moss Spring
	White Mountain Apache Tripe of the Fort Apache Indian Reservation	
	Tier 2/2.5	East Fork White River, above R52 Road, East Fork White River below R52 Road, above Rock Cr., Paradise Creek, above Wohlenberg, Ord Creek, Smith Cienega, Bull Cienega, Smith Creek, Big Bonito , Tonto Creek, below Y47 Crossing, Crooked Creek, Boggy Creek, Lofer Cienego Creek, Little Bonito Creek, above Y55 Crossing, Flash Creek, Squaw Creek, Hurricane Lake, Hurricane Creek, Hughey Creek, Bonito Cienega, West Fork Black River, Hall Cienega, Purcell Cienega, Thompson Creek, Carrizo Creek below Corduroy, Carrizo Creek above Corduroy, Cedar Creek, Big Canyon (E. Cedar Creek), Middle Cedar Creek, West Cedar Creek, Cibecue Creek in Box Canyon to Salt river, Cibecue Creek, Box CallYon up to confluence with Salt Creek, Spring Creek, Salt Creek, Cibecue Creek, from confluence w/Salt Cr, to Big Springs, Cibecue Creek, above Big Springs, Rock Springs Creek, Salt Draw, Canyon Creek S. of Chediski Farms, Willow Creek (Lower Canyon Cr), Oak Creek, Canyon Creek. N. of Chedlski Fanns,
	Tier 3	East Fork While River, in Wilderness Area, Pumpkin Lake
IDR050000	**State of Idaho**	
	For Tier 2 and Tier 3 waters, please consult the Idaho Integrated Report, available at: http://www.deq.idaho.gov/water-quality/surface-water/monitoring-assessment/integrated-report.aspx and the closest regional office of the Idaho Department of Environmental Quality: http://www.deq.idaho.gov/regional-offices-issues.aspx.	

Appendix M - Discharge Monitoring Report (DMR) Form

Part 7.2 requires you to use the electronic DMR system to prepare and submit your Discharge Monitoring Report (DMR) form. However, if you are given approval by the EPA Regional Office to use a paper DMR form, and you elect to use it, you must complete and submit the following form.

NPDES FORM 6100-29	EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 MSGP INDUSTRIAL DISCHARGE MONITORING REPORT (DMR) FORM	OMB No. 2040-0300 Exp. Date: 3/31/2024

A. Approval to Use Paper NOI Form

1. Have you been granted a waiver from electronic reporting from the EPA Regional Office*? ☐ YES ☐ NO

If yes, check which waiver you have been granted, the name of the EPA Regional Office staff person who granted the waiver, and the date of approval:

Waiver granted: ☐ The owner/operator's headquarters is physically located in a geographic area (i.e., ZIP code or census tract) that is identified as under-served for broadband Internet access in the most recent report from the Federal Communications Commission.

☐ The owner/operator has issues regarding available computer access or computer capability

Name of EPA staff person that granted the waiver:

Date approval obtained: / /

*** Note: Note: You are required to obtain approval from the applicable EPA Regional Office prior to using this paper DMR form. If you have not obtained a waiver, you must file this form electronically using the NetDMR at http://www.epa.gov/netdmr/**

1. NPDES ID:

2. Reason(s) for Submission (Check all that apply):

- ☐ Submitting monitoring data (Fill in all Sections).
- ☐ Reporting no discharge for all discharge points for this monitoring period (Fill in Sections A, B, C, D, E.1, and G).
- ☐ Reporting that your site status has changed to inactive and unstaffed and there are no industrial materials or activities exposed to stormwater (Fill in Sections A, B, C, D, and F.4 (include date of status change in comment field).
- ☐ Reporting that your site status has changed to active and/or there are industrial materials or activities exposed to stormwater (Fill in all Sections and include date of status change in comment field in Section F.4).

1. Operator Information:

Operator Name:

Mailing Address:

Street:

City: State: ZIP Code: -

Phone: - - Ext.

E-mail:

2. DMR Preparer (Complete if DMR was prepared by someone otherthan the certifier):

First Name, Middle Initial, Last Name

Organization:

Phone: - - Ext.

E-mail:

D. Facility Information

1. Facility Name:

2, Facility Address:

Street/Location:

City: State: ZIP Code: -

County or Similar Government Subdivision:

E. Discharge Information

1. Identify monitoring period: ☐ Check here if proposing alternative monitoring periods due to irregular stormwater runoff. Identify alternative monitoring schedule and indicate for which alternative monitoring period you are reporting monitoring data:

☐ Quarter 1 (January 1 – March 31)	☐ Quarter 1:	From / To /
☐ Quarter 2 (April 1 – June 30)	☐ Quarter 2:	From / To /
☐ Quarter 3 (July 1 – September 30)	☐ Quarter 3:	From / To /
☐ Quarter 4 (October 1 – December 31)	☐ Quarter 4:	From / To /

2. Are you required to monitor for cadmium, chromium, lead, nickel, silver, or zinc in freshwater? ☐ YES (Skip to 3) ☐ NO (Skip to 4)

3. What is the hardness level of the receiving water? (mg/L)

4. Does your facility discharge into any saltwater receiving waters? ☐YES ☐NO

EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 MSGP INDUSTRIAL DISCHARGE MONITORING REPORT (DMR) FORM	OMB No. 2040-0300

F. Monitoring Information **Note: Make additional copies of this form as necessary.**

1. Nature of Discharge: ☐ Rainfall (Complete line items 2.a., 2.b., & 2.c.) ☐ Snowmelt

2.a. Duration of the rainfall event (hours): ☐☐ 2.b. Rainfall amount (inches): ☐☐.☐ 2.c. Time since previous measurable storm event (days): ☐☐☐

3.a. Discharge Point ID (list the same 3-digit discharge points identified on the NOI form	3.b. Check if Any Discharge Points are Substantially Identical to Other Discharge Points Listed	3.c. Check if No Discharge	3.d. Monitoring Type IM, BM, ELG, S/T, I, O*	3.e. Parameter	3.f. Quantity or Concentration	3.g. Units	3.h. Results Description	3.i. Collection Date	3.j. Exceedance solely attributable to natural background pollutant levels per Part 5.2.6.1	3.k. Exceedance due to run-on per Part 5.2.6.2	3.l Exceedance due to an abnormal event per 5.2.6.3	3.m Exceedance but discharge does not result in any exceedance of water quality standards per Part 5.2.6.5	3.n Aluminum Exceedance demonstrated to not result in an exceedance of your facility-specific criteria per Part 5.2.6.4.a	3.o Copper Exceedance demonstrated to not result in an exceedance of your facility-specific criteria per Part 5.2.6.4.b
	☐ Substantially identical to discharge point: _____	☐									☐	☐	☐	☐
	☐ Substantially identical to discharge point: _____	☐									☐	☐	☐	☐
	☐ Substantially identical to discharge point: _____	☐									☐	☐	☐	☐
	☐ Substantially identical to discharge point: _____	☐									☐	☐	☐	☐

* IM - Indicator monitoring; BM - Benchmark monitoring; (ELG) - Annual effluent limitations guidelines monitoring; (S/T) - State- or tribal-specific monitoring; (I) - Impaired waters monitoring; (O) - Other monitoring as required by EPA

4. Comment and/or Explanation of Any Violations (Reference all attachments here)

G. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

First Name, Middle, Last Name

Title:

Signature: _____ Date: / /

E-mail:

Instructions for Completing EPA Form 6100-29

Discharge Monitoring Report (DMR) for Stormwater Discharges Associated with Industrial Activity Under the NPDES Multi-Sector General Permit

OMB No. 2040-0300

Who Must Submit A Discharge Monitoring Report to EPA?

Facilities covered under EPA's NPDES Stormwater Multi-Sector General Permit (MSGP or permit) that are required to monitor pursuant to Parts 4.2 and 8 of the permit must submit Discharge Monitoring Reports (DMRs) consistent with the reporting requirements specified in Part 7.1 of the permit.

Completing the Form

Obtain and read a copy of the 2021 MSGP, viewable at https://www.epa.gov/npdes/stormwater-discharges-industrial-activities To complete this form, type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. Please submit original document with signature in ink - do not send a photocopied signature. **Photocopy your DMR form for your records before you send the completed original form to the appropriate address.**

Section A. Approval to Use Paper DMR Form

You must indicate whether you have been granted a waiver from electronic reporting from the EPA Regional Office. Note that you are not authorized to use this paper DMR form unless the EPA Regional Office has approved its use. Where you have obtained approval to use this form, indicate the waiver that you have been granted, the name of the EPA staff person who granted the waiver, and the date that approval was provided. See https://www.epa.gov/npdes/contact-us-stormwater for a list of EPA Regional Office contacts.

Section B. Permit Information

Provide the NPDES ID (i.e., NOI tracking number) assigned to the facility for which this DMR is being submitted.

Indicate your reason(s) for submitting this DMR by checking all boxes that apply. The reasons for submission are defined as follows:

- *Submitting monitoring data*: For each storm sampled, submit one DMR form with data for all discharge points sampled. Select this reason even if you only have monitoring data for some of your discharge points (i.e., some discharge points did not discharge). If you select this reason you are required to complete all Sections of the form.
- *Reporting no discharge for all discharge points for this monitoring period*: Indicates that there were no discharges from all discharge points during this monitoring period. If you select this reason you are only required to complete Sections A, B, C, D, E.1, and G.
- *Reporting that your site status has changed to inactive and unstaffed* and there are no industrial materials or activities exposed to stormwater: Indicates that your facility is currently inactive and unstaffed and there are no industrial materials or activities exposed to stormwater (See Part 4.2.1.3 of the permit for more information). If you select this reason you are only required to complete Sections A, B, C, D, and F.4 (include date of status change in comment field).
- *Reporting that your site status has changed from inactive to active* and/or there are industrial materials or activities exposed to stormwater: Indicates that your facility is currently active (See Part 4.2.1.3 of the permit for more information). If you select this reason you are required to complete all Sections of the form and include date of status change in the comment field in Section F.4.

Section C. Facility Operator Information.

Provide the legal name of the person, firm, public organization, or any other entity that operates the facility for which this DMR is being submitted. An operator of a facility is the legal entity that controls the operation of the facility. Refer to Appendix A of the permit for the definition of "operator". Provide the operator's mailing address, phone number, and e-mail. The operator information in this Section should match the operator information provided on your NOI form.

Provide the name, organization, phone number, an e-mail address for the person who prepared this DMR form.

Section D. Facility Information

Enter the official or legal name and complete street address, including city, state, ZIP code, and county or similar government subdivision of the facility. If the facility lacks a street address, indicate the general location of the facility (e.g., Intersection of State Highways 61 and 34). Complete facility information must be provided for permit coverage to be granted. The facility information in this Section should match the facility information provided on your NOI form.

Section E. Discharge Information.

Indicate the appropriate monitoring period (Quarter 1, 2, 3, or 4) covered by the DMR. "Alternative" monitoring periods can apply to facilities located in arid and semi-arid climates, or in areas subject to snow or prolonged freezing. To use alternative monitoring periods, you must provide a revised monitoring schedule here. If using alternative monitoring periods, identify the first day of the monitoring period through the last day of the monitoring period for each of the four periods. The dates should be displayed as month (Mo) / day (Day). See Parts 4.1.6 and 4.1.7 of the permit for more information.

If you are submitting benchmark monitoring data, identify if your facility is required to collect benchmark samples for one or more hardness-dependent metals (i.e., cadmium, lead, nickel, silver, and zinc). If you select "yes" to this question provide the hardness level of the receiving water (in mg/L)). If you select "no" to this question, you must identify if your facility discharges into any saltwater receiving waters.

Instructions for Completing EPA Form 6100-29

Discharge Monitoring Report (DMR) for Stormwater Discharges Associated with Industrial Activity Under the NPDES Multi-Sector General Permit

OMB No. 2040-0300

Section F. Monitoring Information

For the reported monitoring event indicate whether the discharge was from a rainfall or snowmelt event. If you select "rainfall" then indicate the duration (in hours) of the rainfall event, rainfall total (in inches) for that rainfall event, and time (in days) since the previous measurable storm event in line items 2.a-c. For both rainfall and snowmelt monitoring, you must identify the date of collection for the monitoring event in column 3.i. of the table. If the discharge occurs during a period of both rainfall and snowmelt, check both the rainfall and snowmelt boxes and report the appropriate rainfall information in item 2.a-c. To report multiple monitoring events in the same reporting period, copy this form and enter each monitoring event separately with data for all discharge points sampled.

Identify all the discharge points from your facility that discharge stormwater. Each discharge point must be assigned a unique 3-digit number (e.g., 001, 002, 003), and should match the discharge points identified on your NOI form.

If any discharge points are substantially identical, check the box in 3.b and identify the discharge point that the discharge point in 3.a is substantially identical to. In 3.d – k, you only need to provide benchmark monitoring data for one of the discharge points if it is substantially identical.

For any discharge point for which there was no discharge during the monitoring period, check the box in 3.c.

In 3.d, identify the type of monitoring using the specified codes, in parentheses, below:

- (IM) – Indicator monitoring
- (BM) – Benchmark monitoring
- (ELG) – Annual effluent limitations guidelines monitoring;
- (S/T) – State- or Tribal-specific monitoring;
- (I) – Impaired waters monitoring; or
- (O) – Other monitoring as required by EPA.

In 3.e, enter each "parameter" (or "pollutant") monitored. For BM and ELG monitoring, use the same parameter name as in Part 8 of the permit.

In 3.f., enter a sample measurement value for each parameter analyzed and required to be reported. Enter "ND" (i.e., not detected) for any sample results below the method detection limit or "BQL" (i.e., below quantitation limit) for sample results above the detection limit but below the quantitation limit.

In 3.g., enter the units for sample measurement values (i.e., "mg/L" for milligrams per liter) for each parameter analyzed and required to be reported. For monitoring results reported as ND or BQL this space will be left blank and the units will be reported in Column 3.f.

3.h. must be completed for any monitoring results reported as ND or BQL in the "Quality or Concentration" column. For ND, report the laboratory detection level and units in this column. For BQL, report the laboratory quantitation limit and units in this column.

In 3.i. identify the sampling date for each parameter monitoring result reported on this form.

3.j. *Exceedance solely attributable to natural background pollutant levels:* Check box if following the first 4 quarters of benchmark monitoring (or sooner if the exceedance is triggered by less than 4 quarters of data) you have determined that the exceedance of the benchmark is attributable solely to the presence of that pollutant in the natural background for that discharge point and any substantially identical discharge points, or for impaired waters monitoring, the presence of the pollutant is caused solely by natural background, provided that all of the conditions in Part 5.2.6.1 are met.

3.k *Exceedance due to run-on:* Check box if you can demonstrate and obtain EPA agreement that run-on from a neighboring source (e.g., a source external to your facility) is the cause of the exceedance, provided that the conditions in Part 5.2.6.2 are met.

3.l. *Exceedance due to an abnormal event:* Check box if one single sampling event is abnormal and you have immediately documented per Part 5.3 that the single event was abnormal and met all other conditions in Part *5.2.6.3.*

3.m. *Exceedance but discharge does not result in any exceedance of water quality standards per Part 5.2.6.5: Check box if you can* demonstrate through an analysis that an exceedance triggering AIM requirements does not result in any exceedance of applicable water quality standards, *provided that all the conditions in Part 5.2.6.5 are met.*

3.n *Aluminum exceedance demonstrated to not result in an exceedance of your facility-specific criteria per Part 5.2.6.4.a:* Check box if you can demonstrate through an analysis that an aluminum exceedance does not result in an exceedance of your facility-specific criteria using the national recommended water quality criteria in-lieu of the applicable MSGP benchmark threshold.

3.o *Copper exceedance demonstrated to not result in an exceedance of your facility-specific criteria per Part 5.2.6.4.b:* Check box if you can demonstrate through an analysis that a copper exceedance does not result in an exceedance of your facility-specific criteria using the national recommended water quality criteria in-lieu of the applicable MSGP benchmark threshold.

Where violations of the permit requirements are reported, include a brief explanation to describe the cause and corrective actions taken, and reference each violation by date. Also, this section should include any additional comments such as are required when changing site status from inactive and unstaffed to active or vice versa. Attach additional pages if you need more space.

Attach additional copies of Section F as necessary to address all discharge points and parameters.

Section G. Certification Information

DMRs must be signed by a person described below, or by a duly authorized representative of that person.

For a corporation: By a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated

Appendix O - Summary of Reports Permit Submittals

Permit Section	Applicable Operator	Report/Submittal	Frequency	Due Date(s)	Where to Submit
Part 1.1.4	Only for operators seeking coverage under Part 1.1.4 eligibility criterion C3	**Procedures Relating to Endangered Species Protection Appendix E Criterion C3 Eligibility Form**: Submittal of Criterion C Form	Once, if applicable	At the same time as the NOI for permit coverage is submitted (an additional 30 calendar day review period will apply)	Electronically using the NPDES eReporting Tool (NeT) for MSGP
Part 1.3	**Operator operating consistent with EPA's No Action Assurance and submitted an Intent to Operate (ITO) form** [Operators of industrial activities who commenced discharging between June 4, 2020 and March 1, 2021 and have been operating consistent with EPA's June 3, 2020 'No Action Assurance for the NPDES Stormwater Multi-Sector General Permit for Industrial Activities.']	Submittal of Notice of Intent (NOI)	Once per permit term	As soon as possible, but see the June 3, 2020 'No Action Assurance for the NPDES Stormwater Multi-Sector General Permit for Industrial Activities' (and any updates to that document) for additional guidance on deadlines.	Electronically using the NPDES eReporting Tool (NeT for MSGP
Part 1.3	**New facility without MSGP coverage** (Operators of industrial activities that will commence discharging after March 1, 2021)	Submittal of Notice of Intent (NOI)	Once per permit term	At least 30 calendar days prior to commencing discharge	Electronically using the NPDES eReporting Tool (NeT) for MSGP
Part 1.3	**Existing MSGP facility** [Operators of industrial activities whose stormwater discharges were covered under the 2015 MSGP]	Submittal of Notice of Intent (NOI)	Once per permit term	No later than May 30, 2021. However, if you have not previously obtained coverage under an NPDES permit, you must submit your NOI immediately.	Electronically using the NPDES eReporting Tool (NeT) for MSGP

Permit Section	Applicable Operator	Report/Submittal	Frequency	Due Date(s)	Where to Submit
Part 1.3	**Existing facility covered under an alternative permit** [Operators seeking coverage for stormwater discharges previously covered under an individual permit or an alternative general permit]	Submittal of Notice of Intent (NOI)	Once per permit term	At least 30 calendar days prior to commencing discharge	Electronically using the NPDES eReporting Tool (NeT) for MSGP
Part 1.3	**Existing MSGP facility with a new operator** [New operators of existing industrial activities with stormwater discharges previously authorized under the 2021 MSGP]	Submittal of Notice of Intent (NOI)	Once per permit term	At least 30 calendar days prior to the date of transfer of control to the new operator.	Electronically using the NPDES eReporting Tool (NeT) for MSGP
Part 1.3	**Existing facility without MSGP coverage** [Operators of industrial activities that commenced discharging prior to March 1, 2021, but whose stormwater discharges were not covered under the 2015 MSGP or another NPDES permit and have not been operating consistent with EPA's No Action Assurance for EPA's NPDES MSGP]	Submittal of Notice of Intent (NOI)	Once per permit term	Immediately; your stormwater discharges are currently unpermitted.	Electronically using the NPDES eReporting Tool (NeT) for MSGP

Permit Section	Applicable Operator	Report/Submittal	Frequency	Due Date(s)	Where to Submit
Part 1.3.4	**An operator needing to correct or update any NOI fields**	Submittal of a Change NOI	As applicable	For existing operator, within 30 calendar days after the change occurs. Within 30 calendar days of the transfer in operator or a new operator taking over operational control at an existing facility, the new operator must submit a new NOI. No later than 30 calendar days after MSGP coverage becomes active for the new operator, the previous operator must submit a Notice of Termination (NOT) per Part 1.4.	Electronically using the NPDES eReporting Tool (NeT) for MSGP
Part 1.4	**An operator seeking to terminate their permit coverage under the 2021 MSGP**	Notice of Termination	Once, if applicable	Within 30 days after: • a new operator takes over responsibility for the facility; or • operations and stormwater discharges have ceased; or • for Sector G, H, or J facilities, the applicable termination requirements have been met; or • alternative permit coverage has been obtained	Electronically using the NPDES eReporting Tool (NeT) for MSGP

Permit Section	Applicable Operator	Report/Submittal	Frequency	Due Date(s)	Where to Submit
Part 1.5	**An eligible operator seeking an exclusion from NPDES permitting per 40 CFR 122.26(g)**	Conditional "No Exposure" Certification Form (NEC)	If eligible, once every 5 years	As necessary	Electronically using the NPDES eReporting Tool (NeT) for MSGP
Part 3.1.6	**All operators, unless eligible for an exception**	Routine Inspection Documentation	At least quarterly	By the end of the quarter	Reports are kept with SWPPP
Part 3.2.3	**All operators, unless eligible for an exception**	Quarterly Visual Assessment Documentation	At least quarterly	By the end of the quarter	Reports are kept with SWPPP
Part 5.3	**Operators that must perform corrective action or Additional Implementation Measures per Parts 5.1 and 5.2**	Corrective Action and AIM Documentation	• Document existence of corrective action/AIM condition within 24 hours of becoming aware of the condition; • Document corrective actions/AIMs taken or to be taken within 14 days from the time of discovery of the condition.	As necessary	Reports are kept with SWPPP
Part 6 Part 7.3	**All operators**	**Stormwater Pollution Prevention Plan (SWPPP)**	• Attach SWPPP to NOI, provide URL for SWPPP, or provide SWPPP information directly on the NOI form. • Update the on-site SWPPP as site conditions indicate. At minimum, the SWPPP must be modified based on corrective actions and deadlines required under Part 5.	Develop initial SWPPP prior to the submittal of NOI form. Update the SWPPP information included in attachment to NOI, on URL, or on NOI form, at a minimum, no later than 45 days after conducting the final routine facility inspection for the year.	Electronically using the NPDES eReporting Tool (NeT) for MSGP

Permit Section	Applicable Operator	Report/Submittal	Frequency	Due Date(s)	Where to Submit
Part 4 Part 7.4	**All operators**	Discharge Monitoring Reports (DMRs)	• Indicator Monitoring for pH, Total Suspended Solids (TSS), and Chemical Oxygen Demand (COD) (Part 4.2.1.1.a.): 1/quarter for entire permit coverage; • Indicator Monitoring for Polycyclic Aromatic Hydrocarbons (PAHs) (Part 4.2.1.1.b): 2/year in years 1 and 4 of permit coverage; • Benchmark Monitoring (Part 4.2.2): 1/quarter in years 1 and 4 of permit coverage (additional monitoring may be required if exceedances occur); • Effluent Limitations Monitoring (Part 4.2.3): 1/year for entire permit coverage; • State or Tribal Monitoring (Part 4.2.4): See Part 9 of the permit for frequency; • Impaired Waters Monitoring (Part 4.2.5): 1/year in years 1 and 4 of permit coverage for discharges to impaired waters without an EPA-approved or established total maximum daily load (TMDL)	Within 30 days of receiving your full laboratory results for all monitored discharge points during the reporting period.	Electronically using EPA's electronic DMR tool (Net-DMR)

Permit Section	Applicable Operator	Report/Submittal	Frequency	Due Date(s)	Where to Submit
Part 7.4	**All operators**	Annual Report	1/year	By January 30th	Electronically using the NPDES eReporting Tool (NeT) for MSGP (NeT-MSGP)
Part 7.5	**Operators subject to follow-up monitoring per Part 4.2.3.3**	Exceedance Report for Numeric Effluent Limitations	If applicable	30 days after receiving laboratory results if 30-day follow-up monitoring indicates exceedance	Follow-up monitoring submitted Electronically using EPA's electronic DMR tool (Net-DMR) Exceedance reports submitted directly to the applicable EPA Regional Office listed in Part 7.8 of the permit
Part 7.6	**Any applicable operator**	Additional Reporting (Noncompliance endangering health, reportable quantity spills, etc.)	As necessary	Varies – see Part 7.6	Varies – see Part 7.6

Appendix P - List of Federal CERCLA Sites

Part 1.1.7 of the MSGP has special requirements for discharges to a federal CERCLA site.[1]

If your facility discharges to one of the federal CERCLA sites listed below, you must notify the EPA Regional Office when submitting your NOI and the EPA Regional Office must determine that you are eligible for permit coverage. In determining eligibility for coverage under Part 1.1.7, the EPA Regional Office may evaluate whether you are implementing or plan to implement adequate controls and/or procedures to ensure your discharge will not lead to recontamination of aquatic media at the CERCLA Site, (i.e., your stormwater discharge will not be controlled as necessary such that the receiving water of the United States will meet an applicable water quality standard. If it is determined that your facility discharges to a CERCLA Site listed below after you have obtained coverage under this permit, you must contact your EPA Regional Office and ensure that you have either implemented or will implement adequate controls and/or procedures to ensure that your discharges will not lead to recontamination of aquatic media at the CERCLA Site such that your stormwater discharge will be controlled as necessary such that the receiving water of the United States will meet an applicable water quality standard.

EPA Region 10

The CERCLA Sites and the receiving waters associated with these sites to which the requirements of Part 1.1.7 apply are listed in the table below. The areas where the permit applies are enumerated in Appendix C of the permit. Operators who discharge / intend to discharge into the receiving waters listed below must first contact the EPA Regional Office before submitting an NOI. Contact information is viewable at: https://www.epa.gov/npdes-permits/stormwater-discharges-industrial-activities-region-10.

Similarly, if you have received notice from EPA that the facility to be covered under the MSGP is considered a potential source to a clean up site, you must first contact the Regional EPA office before submitting an NOI.

	Waterbody (HUC code/Watershed)	**Superfund Sites CERCLIS ID Latitude / Longitude Major Contaminants**
ID	St. Joe River; Coeur d'Alene Lake Basin	St. Maries Creosote IDSFN1002095 47.191697 / -116.343000L PAHs, HPAHs
WA	Commencement Bay, Puget Sound	Commencement Bay, Near Shore/Tide Flats WAD980726368 47.155998 / -122.245998 Dioxins, furans, arsenic, copper, lead, zinc, 4-methyl-phenol, Hex-CB, HPAHs, PCBs, PCE, cadmium, mercury, LPAHs
WA	Duwamish Waterway; Elliott Bay; Puget Sound	Harbor Island (Lead) WAD980722839 47.344584 / -122.210792 Lead, arsenic, copper, HPAHs, LPAHs, mercury, PCBs, zinc, TBT

[1] "CERCLA site" means a facility as defined in Section 101(9) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9601(9), that is undergoing a remedial investigation and feasibility study, or for which a Record of Decision for remedial action has been issued in accordance with the National Contingency Plan, 40 C.F.R. Part 300

EPA Region 10

The CERCLA Sites and the receiving waters associated with these sites to which the requirements of Part 1.1.7 apply are listed in the table below. The areas where the permit applies are enumerated in Appendix C of the permit. Operators who discharge / intend to discharge into the receiving waters listed below must first contact the EPA Regional Office before submitting an NOI. Contact information is viewable at: https://www.epa.gov/npdes-permits/stormwater-discharges-industrial-activities-region-10.

Similarly, if you have received notice from EPA that the facility to be covered under the MSGP is considered a potential source to a clean up site, you must first contact the Regional EPA office before submitting an NOI.

	Waterbody (HUC code/Watershed)	**Superfund Sites CERCLIS ID Latitude / Longitude Major Contaminants**
WA	Clam Bay; Puget Sound	Old Navy Dump/ Manchester Lab WA8680030931 47.342798 / -122.325298 PCBs, copper, lead, zinc, silver, 2,4-dimethyl-phenol, PCBs
WA	Elliott Bay; Puget Sound	Pacific Sound Resources WAD009248287 47.345639 / -122.215998 LMW PAHs, HMWPAHs, PCBs
WA	Columbia River	Upper Columbia River (T2) WASFN1002171 47.5722 / -118.5846
WA	Puget Sound	Puget Sound Naval Shipyard WA2170023418 47.333298 / -122.384999 PCBs, mercury
WA	Puget Sound	Wycoff / Eagle Harbor WAD009248295 47.371798 / -122.310012 Mercury, LPAHs, HPAHs
WA	Duwamish Waterway; Elliott Bay; Puget Sound	Lower Duwamish Waterway (T2) WA0002329803 47.321608 / -122.194040 PCBs, PAHs, phthalates, inorganics, mercury, semi-VOCs

NPDES FORM 6100-059	EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 Endangered Species Protection - Criterion C3 Eligibility Form	OMB No. 2040-0300 Exp. Date: 3/31/2024

Instructions:

In order to be eligible for coverage under Criterion C3, **you must complete the Endangered Species Protection section of the Notice of Intent in the NPDES eReporting Tool (NeT-MSGP)**. Per Part 7.1, you must submit your NOI electronically via NeT-MSGP, unless the EPA Regional Office grants you a waiver from electronic reporting, in which case you may use this paper Criterion C3 form. If using the paper form, you must complete the following form and you must submit it to EPA following the instructions in Section VII **a minimum of 30 days prior to filing your NOI for permit coverage**. After you submit your form, you may be contacted by EPA with additional measures (e.g., additional stormwater controls or modifications to your discharge- related activities) that you must implement in order to ensure your eligibility under Criterion C3.

If after completing this worksheet you cannot make a determination that your discharges and discharge-related activities are not likely to adversely affect ESA listed threatened or endangered species or designated critical habitat, you must submit this completed worksheet to EPA, and you may not file your NOI for permit coverage until you receive a determination from EPA that your discharges and/or discharge-related activities are not likely to adversely affect ESA-protected species and critical habitat.

Note: Much of the information needed for this form can be obtained from your draft SWPPP which will be needed when you file your NOI.

Section I. Operator, Facility, and Site Location Information

1) Operator Information:

a) Operator Name:

b) Point of Contact

Phone: ___ - ___ - ____ Ext. ____

E-mail:

2) Facility Information

a) Facility Name:

b) Check which of the following applies:

☐ I am seeking coverage under the MSGP as a new discharger or as a new source

☐ I am seeking coverage under the MSGP as an existing discharger and my facility has modifications to its discharge characteristics (e.g., changes in discharge flow or area drained, different pollutants) and/or discharge-related activities (e.g., stormwater controls)

Indicate the number of years the facility has been in operation: _____ years

Provide your NPDES ID (i.e., permit tracking number) from your previous MSGP coverage: _____

☐ I am seeking coverage under the MSGP as an existing discharger and there are no modifications to my facility.

Indicate the number of years the facility has been in operation: _____ years

Provide your NPDES ID (i.e., permit tracking number) from your previous MSGP coverage: _____

c) Facility Address:

Address 1 Street/ Location:

Address 2:

City: State: ZIP Code: -

d) Identify the primary industrial sector to be covered under the 2021 MSGP:

SIC Code **or** **Primary Activity Code**

Sector **and** **Subsector**

e) Identify the sectors of any co-located activities to be covered under the 2021 MSGP:

Sector ☐☐☐☐☐☐☐☐☐☐ **and** **Subsector** ☐☐☐☐☐☐☐☐☐☐

Sector ☐☐☐☐☐☐☐☐☐☐ **and** **Subsector** ☐☐☐☐☐☐☐☐☐☐

Sector ☐☐☐☐☐☐☐☐☐☐ **and** **Subsector** ☐☐☐☐☐☐☐☐☐☐

Sector ☐☐☐☐☐☐☐☐☐☐ **and** **Subsector** ☐☐☐☐☐☐☐☐☐☐

Sector ☐☐☐☐☐☐☐☐☐☐ **and** **Subsector** ☐☐☐☐☐☐☐☐☐☐

Sector ☐☐☐☐☐☐☐☐☐☐ **and** **Subsector** ☐☐☐☐☐☐☐☐☐☐

f) Estimated area of industrial activity exposed to stormwater: _____ acres

g) Provide a general description of the industrial activities that are taking place at this facility:

3) Receiving Waters Information

List all the stormwater outfalls from your facility				**For each outfall, provide the following receiving water information:**	
Discharge Point ID	**Design Capacity (if known)**	**Latitude (decimal degrees)**	**Longitude (decimal degrees)**	**Name of the receiving water that receives stormwater from the discharge point and/or from the MS4 that the discharge point discharges to**	**Type of Waterbody (e.g., lake, pond, river/stream/creek, estuarine/marine water)**
		__ __ . _ _ _ _ ° N	_ _ _ . _ _ _ _ ° W		
		__ __ . _ _ _ _ ° N	_ _ _ . _ _ _ _ ° W		
		__ __ . _ _ _ _ ° N	_ _ _ . _ _ _ _ ° W		
		__ __ . _ _ _ _ ° N	_ _ _ . _ _ _ _ ° W		
		__ __ . _ _ _ _ ° N	_ _ _ . _ _ _ _ ° W		

Section II. Action Area

As required in Step 2 of Section E.4 of Appendix E, you must include a map and a written description of the action area of your facility in Attachment 1 of this appendix.

Section III. Listed Species and Critical Habitat

As required in Step 3 of Section E.4 of Appendix E, attach a copy of the species and critical habitat list(s) from the Service(s) to Attachment 2 of this appendix and use the list(s) to complete the rest of this worksheet. For FWS species, include the full printout from your IPaC query/Official Species List in Attachment 2. You can include the map from your IPaC query in Attachment 1.

Note: For the purposes of this permit, "terrestrial species" would not include animal or plant species that 1) spends any portion of its life cycle in a waterbody or wetland, or 2) if an animal, depends on prey or habitat that occurs in a waterbody or wetland. For example, shorebirds, wading birds, amphibians, and certain reptiles would not be considered terrestrial species under this definition. Please also be aware that some terrestrial animals (e.g., certain insects, amphibians) may have an aquatic egg or larval/juvenile phase.

Review your species list in Attachment 2, choose one of the following three statements, and follow the corresponding instructions:

☐ The species list includes only terrestrial species and/or their designated critical habitat. No aquatic or aquatic- dependent species or their critical habitat are present in the action area. **You may skip to Section IV of this form. You are not required to fill out Section V.**

☐ The species list includes only aquatic and/or aquatic-dependent species and/or their designated critical habitat. No terrestrial species or their critical habitat are present in the action area. **You may skip to Section V of this form and are not required to fill out Section IV.**

☐ The species list includes both terrestrial and aquatic or aquatic-dependent species and/or their designated critical habitat. **You must fill out both Sections IV and V of this form.**

Section IV. Evaluation of Discharge-Related Activities Effects

Note: You are only required to fill out this section if your facility's action area contains terrestrial species and/or their designated critical habitat. If your action area only contains aquatic and/or aquatic-dependent species and/or their designated critical habitat, you can skip directly to Section V.

Most of the potential effects related to coverage under the MSGP are assumed to occur to aquatic and/or aquatic-dependent species. However, in some cases, potential effects to terrestrial species and/or their critical habitat should be considered as well from any discharge-related activities that occur during coverage under the MSGP. Examples of discharge-related activities that could have potential effects on listed terrestrial species or their critical habitat include the storage of materials and land disturbances associated with stormwater management-related activities (e.g., the installation or placement of stormwater control measures).

A. Select the applicable statement(s) below and follow the corresponding instructions:

☐ There are no discharge-related activities that are planned to occur during my coverage under the 2021 MSGP. You can conclude that your discharge-related activities will have no likely adverse effects, and:

- If there are any aquatic or aquatic-dependent species and/or their critical habitat in your action area, you must skip to Section V, Evaluation of Discharge Effects, below.
- If there are no aquatic or aquatic-dependent species, you may skip to Section VI and verify that your activities will have no likely adverse effects. You must submit this form to EPA as specified in Section VII of this form. You may select criterion C on your NOI form and may submit your NOI for permit coverage 30 days after you have submitted this Criterion C Eligibility Form. You must also provide a description of the basis for the criterion you selected on your NOI form, **including the species and critical habitat list(s) in your action area,** as well as any other documentation supporting your eligibility. You must also include this completed Criterion C Eligibility Form in your SWPPP.

☐ There are discharge-related activities planned as part of the proposal. Describe your discharge- related activities in the following box and continue to (b) below.

B. In order to ensure any discharge-related activities will have no likely adverse effects on ESA- listed threatened and endangered species and/or their designated critical habitat, you must certify that all the following are true:

☐ Discharge-related activities will occur:

- on previously cleared/developed areas of the site where maintenance and operation of the facility are currently occurring or where existing conditions of the area(s) in which the discharge-related activities will occur precludes its use by listed species (e.g., work on existing impervious surfaces, work occurring inside buildings, area is not used by species), and
- if discharge-related activities will include the establishment of structures (including, but not limited to, infiltration ponds and other controls) or any related disturbances, these structures and/or disturbances will be sited in areas that will not result in isolation or degradation of nesting, breeding, or foraging habitat or other habitat functions for listed animal species (or their designated critical habitat), and will avoid the destruction of native vegetation (including listed plant species).

☐ If vegetation removal (e.g., brush clearing) or other similar activities will occur, no terrestrial listed species that use these areas for habitat would be expected to be present during vegetation removal and these activities will not occur within critical habitat.

If all the above are true, you can conclude that your discharge-related activities will have no likely adverse effects, and:

- If there are any aquatic or aquatic-dependent species and/or critical habitat in your action area, you must skip to Section V, Evaluation of Discharge Effects, below.
- If there are no aquatic or aquatic-dependent species, you may skip to Section VI and verify that your activities will have no likely adverse effects. You must submit this form to EPA as specified in Section VII of this form. You may select criterion C on your NOI and may submit your NOI for permit coverage 30 days after you have submitted this completed form. You must also provide a description of the basis for the criterion you selected on your NOI form, **including the species and critical habitat list(s)**, and any other documentation supporting your eligibility. You must also include this completed Criterion C Eligibility Form in your SWPPP.
- **If any of the above are not true**, you cannot conclude that your discharge-related activities will have no likely adverse effects. You must complete the rest of this form (if applicable) and must submit the form to EPA for assistance in determining your eligibility for coverage.

Section V. Evaluation of Discharge Effects

Note: You are only required to fill out this section if your facility's action area includes aquatic and/or aquatic-dependent species and/or their critical habitat.

In this section, you will evaluate the likelihood of adverse effects from your facility's discharges. The scope of effects to consider will vary with each facility and species/critical habitat characteristics. The following are examples of discharge affects you should consider:

- *Hydrological Effects.* Stormwater discharges may adversely affect receiving waters by causing changes in water quality parameters such as turbidity, temperature, salinity, or pH. Stormwater discharges may adversely affect the immediate vicinity of the discharge point through streambank erosion and scour. These effects will vary with the amount of stormwater discharged and the volume and condition of the receiving water. Where a stormwater discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely.

- *Toxicity of Pollutants.* Pollutants in stormwater may have toxic effects on listed species and may adversely affect critical habitat. Exceedances of benchmarks, effluent limitation guidelines, or state or tribal water quality requirements may be indicative of potential adverse effects on listed species or critical habitat. However, some listed species may be adversely affected at pollutant concentrations below benchmarks, effluent limitation guidelines, and state or tribal water quality standards due to exposures to multiple stressors at the same time. In addition, stormwater pollutants identified in Part 6.2.3.2 of your SWPPP, but not monitored as benchmarks or effluent limitation guidelines, may also adversely affect listed species and critical habitat.

As these effects are difficult to analyze for listed species, their prey, habitat, and designated critical habitat, this form helps you to analyze your discharges to make a determination of whether your discharges will likely have adverse effects and whether there are any additional controls you can implement to ensure no likely adverse effects.

A. Evaluation of Pollutants and Controls to Avoid Adverse Effects. In this section, you must document **all** of your pollutant sources and pollutants expected to be discharged in stormwater (see Part 8). You must also document the controls you will implement to avoid adverse effects on listed aquatic and aquatic-dependent species and critical habitat. You must include specific details about the expected effectiveness of the controls in avoiding adverse effects to the listed aquatic-and aquatic-dependent species and critical habitat. Attach additional pages if needed.

Potential Pollutant Source	Potential Pollutants	Controls to Avoid Adverse Effects on Listed Aquatic and Aquatic-Dependent Species and Critical Habitat. Include information supporting why the control(s) will ensure no adverse effects, including any data you have about the effectiveness of the control(s) in reducing pollutant concentrations. You may also attach photos of your controls to this form
e.g., *vehicle and equipment fueling*	*e.g.,* • *Oil & grease* • *Diesel* • *Gasoline* • *TSS* • *Antifreeze*	*e.g.,* • *Fueling operators (including the transfer of fuel from tank trucks) will be conducted on an impervious or contained pad or under cover* • *Drip pans will be used where leaks or spills of fuel can occur and where making and breaking hose connections* • *Spill kit will be kept on-site in close proximity to potential spill areas* • *Any spills will be cleaned-up immediately using dry clean-up methods* • *Stormwater runoff will be diverted around fueling areas using diversion dikes and curbing*

Potential Pollutant Source	Potential Pollutants	Controls to Avoid Adverse Effects on Listed Aquatic and Aquatic-Dependent Species and Critical Habitat.

☐ Check if you are not able to make a preliminary determination that any of your pollutants will be controlled to a level necessary to avoid adverse effects on aquatic and/or aquatic-dependent listed species and their designated critical habitat. You must check in Section VI that you are unable to make a determination of no likely adverse effects and must complete the rest of the form. You must submit your completed form to EPA for assistance in determining your eligibility for coverage.

B. Analysis of Effects Based on Past Monitoring Data. Select which of the following applies to your facility:

☐ I have no previous monitoring data for my facility because there are no applicable monitoring requirements for my facility's sector(s).

☐ I have no previous monitoring data for my facility because I am a new discharger or a new source, but I am subject to monitoring under the 2021 MSGP. You must provide information to support a conclusion that your facility's discharges are not expected to result in benchmark or numeric effluent limit exceedances that will adversely affect listed species or their critical habitat:

☐ My facility has not had any exceedances under the 2015 MSGP of any required benchmark(s) or numeric effluent limits. I comply with the applicable monitoring requirements and have not had any exceedances

☐ My facility has had exceedances of one or more benchmark(s) or numeric effluent limits under the 2015 MSGP, but I have addressed them during my coverage under the 2015 MSGP, or in my evaluation of controls to avoid adverse effects in (A) above. Describe all actions (including specific controls) that you will implement to ensure that the pollutants in your discharge(s) will not result in likely adverse effects from future exceedances.

☐ Check if your facility has had exceedances of one or more benchmarks or numeric effluent limits under the 2015 MSGP and you have not been able to address them to avoid adverse effects from future exceedances, or if you are a new discharger or a new source but you are not sure if you can avoid adverse effects from possible exceedances. You must check in Section VI that you are unable to make a determination of no likely adverse effects. You must submit your completed form to EPA for assistance in determining your eligibility for coverage. You may not file your NOI for permit coverage until you are able to make a determination that your discharges will avoid adverse effects on listed species and designated critical habitat.

Section VI. Verification of Preliminary Effects Determination

Based on Steps I – V of this form, you must verify your preliminary determination of effects on listed species and designated critical habitat from your discharges and/or discharge-related activities:

☐ Following the applicable Steps in I – V above, I have provided information supporting a preliminary determination that my discharges and/or discharge-related activities are not likely to adversely affect listed species and designated critical habitats.

☐ Following the applicable Steps in I – V above, I am **not** able to provide information supporting a preliminary determination that my discharges and/or discharge-related activities are not likely to adversely affect listed species and designated critical habitats.

I. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

First Name, Middle, Last Name

Title

Signature: _____ Date:

E-mail:

Section VII. Criterion C Eligibility Form Submission Instructions

Only if the applicable EPA Regional Office has granted you a waiver from electronic reporting, you must submit this completed form to EPA at msgpesa@epa.govm, including any attachments and any additional information that demonstrates how you will avoid or eliminate adverse effects to listed threatened and endangered species or designated critical habitat (e.g., specific controls you will implement to avoid or eliminate adverse effects). **Any missing or incomplete information may result in a delay of your coverage under the permit.**

If you have made a preliminary determination that your discharges and/or discharge-related activities are not likely to adversely affect listed species and critical habitat, this form must be submitted a minimum of 30 days prior to submitting your NOI for permit coverage under criterion C. Please note that during either the 30-day Criterion C Eligibility Form review period prior to your NOI submission, or within 30 days after your NOI submission and before you have been authorized for permit coverage, EPA may advise you that additional information is needed, or that there are additional measures you must implement to avoid likely adverse effects.

If you are unable to make a preliminary determination that your discharges and/or discharge- related activities are not likely to adversely affect listed species and critical habitat, this worksheet must be submitted to EPA, but you may not file your NOI for permit coverage until you have received a determination from EPA that your discharges and/or discharge-related activities are not likely to adversely affect listed species and critical habitat.

Attachment 1

Include a **map and a written description** of the action area of your facility, as required in Step 2 of Section E.4 of Appendix E. You may choose to include the map that is generated from the FWS' on-line mapping tool IPaC (the Information, Planning, and Consultation System) located at http://ecos.fws.gov/ipac/.

The written description of your action area that accompanies your action area map must explain your rationale for the extent of the action area drawn on your map. For example, your action area written description may look something like this:

> *The action area for the (name of your facility)'s stormwater discharges extends downstream from the outfall(s) in (name of receiving waterbody) (# of meters/feet/kilometers/miles). The downstream limit of the action area reflects the approximate distance at which the discharge waters and any pollutants would be expected to cause potential adverse effects to listed species and/or critical habitat because (insert rationale). The action area does/does not extend to the (name of receiving waterbody)'s confluence with (name of confluence waterbody) because (insert rationale).*

Note that your action area written description will be highly site-specific, depending on the expected effects of your facility's discharges and discharge-related activities, receiving waterbody characteristics, etc.

Attachment 2

List or attach the list(s) of species and critical habitat in your action area on this sheet, as required in Step 3 of Section E.4 of Appendix E. You must include a list for applicable listed NMFS and USFWS species and critical habitat. If there are listed species and/or critical habitat for only one Service, you must include a statement confirming there are no listed species and/or critical habitat for the other Service. For USFWS species, include the USFWS Official Species List full printout from your IPaC query (including the consultation code and event code at the top of the FWS printout). *Note: If your Official Species List from the USFWS indicated no species or critical habitat were present in your action area, include the consultation code and event code that can be found at the top of your Official Species List in your NOI basis statement. If an Official Species List was not available on IPaC, list the contact date, the ecological services field office and the name of the Service staff with whom you corresponded to identify the existence of any USFWS species or critical habitat present in your action area.*

Paperwork Reduction Act Notice

This collection of information is approved by OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. (OMB Control No. 2040-0300). Responses to this collection of information are mandatory (40 CFR 122.26). An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The public reporting and recordkeeping burden for this collection of information is estimated to range from 2.5 to 3 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the Regulatory Support Division Director, U.S. Environmental Protection Agency (2821T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

APPENDIX B

2021 NPDES NOTICE OF INTENT MAR053164, APPENDIX E CRITERIA, TENANT CERTIFICATION TENNANT NOTICE OF INTENT

NPDES FORM 3510-6	EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NOTICE OF INTENT (NOI) FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY UNDER THE NPDES MULTI-SECTOR GENERAL PERMIT	FORM Approved OMB No. 2040-0004

Permit Information

This form has not yet been certified.

Master Permit Number: MAR050000

NPDES ID: MAR053164

Eligibility Information

State/territory where your facility is discharging: MA

Does your facility discharge to federally recognized Indian Country lands? No

Are you a *"Federal Operator"* as defined in Appendix A (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_a_-_definitions.pdf)? No

Which type of form would you like to submit? Notice of Intent (NOI)

By indicating "Yes" below, I confirm that I understand that the MSGP only authorizes the stormwater discharges in Part 1.1.2 and the allowable non-stormwater discharges listed in Part 1.2.2. Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), during an inspection, etc. If any discharges requiring NPDES permit coverage other than the allowable stormwater and non-stormwater discharges listed in Parts 1.2.1. and 1.2.2. will be discharged, they must be covered under another NPDES permit.

Yes

Are you a new discharger or a new source as defined in Appendix A (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_a_-_definitions.pdf)? No

- **Have stormwater discharges from your facility been covered previously under an NPDES permit?** Yes
  - **If yes, provide your most current NPDES ID (i.e., permit tracking number) if you had coverage under EPA's MSGP or the NPDES permit number if you had coverage under an EPA individual permit:** MAR053164
- **Are you discharging to any waters of the U.S. that are designated by the state or tribal authority under its antidegradation policy as a Tier 3 water (Outstanding National Resource water)? (See Appendix L (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_l_-_list_of_tier_3_tier_2_and_tier_2.5_waters.pdf))** No

What is the legal name of the Operator as defined in Appendix A (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_a_-_definitions.pdf)? Cape Cod Gateway Airport

What is the name of your facility or activity as defined in Appendix A (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_a_-_definitions.pdf)?
CAPE COD GATEWAY AIRPORT

Operator Information

Operator Information

Operator Name: Cape Cod Gateway Airport

Operator Mailing Address

Address Line 1: 480 Barnstable Road

Address Line 2:

City: Hyannis

ZIP/Postal Code: 02601

State: MA

County or Similar Division: Barnstable

Operator Point of Contact Information

First Name **Middle Initial** **Last Name:** Katie Servis

Title: Asst. Airport Manager

Phone: 5087752020 **Ext.:**

Email: kservis@flyhya.com

NOI Preparer Information

☑ **This NOI is being prepared by someone other than the certifier.**

First Name **Middle Initial** **Last Name:** Josephine Ibanez

Organization: Horsley Witten Group, Inc.

Phone: 508-833-6600 **Ext.:**

Email: jibanez@horsleywitten.com

Facility Information

Facility Information

Facility Name: CAPE COD GATEWAY AIRPORT

Facility Address

Address Line 1: 480 BARNSTABLE ROAD

Address Line 2:

City: HYANNIS

ZIP/Postal Code: 02601

State: MA

County or Similar Division: Barnstable

Latitude/Longitude for the Facility

Latitude/Longitude: 41.6666°N, 70.2859°W

Latitude/Longitude Data Source: Map

Horizontal Reference Datum: NAD 83

General Facility Information

What is the ownership type of the facility? Municipality

Estimated area of industrial activity at your facility exposed to stormwater (rounded to the nearest quarter acre): 645

Is your facility presently inactive and unstaffed? No

Exception for Inactive and Unstaffed Facilities: The requirement for indicator monitoring, impaired waters monitoring, and/or benchmark monitoring does not apply at a facility that is inactive and unstaffed, as long as there are no industrial materials or activities exposed to stormwater.

If circumstances change during the permit term that affect your qualifications for this exception to monitoring requirements (i.e. industrial materials or activities exposure to stormwater or your facility's active/inactive and staffed/unstaffed status) you must submit a NOI notifying EPA of the change in circumstances.

Sector-Specific Information

Primary Sector: S

Primary Subsector: S1

Primary SIC Code: 4581

If you are a Sector S (Air Transportation) facility, do you anticipate using more than 100,000 gallons of pure glycol in glycol-based deicing fluids and/or 100 tons or more of urea on an average annual basis? No

Discharge Information

By indicating "Yes" below, I confirm that I understand that the MSGP only authorizes the stormwater discharges in Part 1.2.1 and the allowable non-stormwater discharges listed in Part 1.2.2. Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), during an inspection, etc. If any discharges requiring NPDES permit coverage other than the authorized stormwater and non-stormwater discharges listed in Parts 1.2.1 and 1.2.2 will be discharged, they must be covered under another NPDES permit.

Yes

Federal Effluent Limitation Guidelines

Identify the Effluent Limitation Guideline(s) that apply to your stormwater discharges.

40 CFR Part/Subpart	Eligible Discharges	Affected MSGP Sector	New Source Date	Applicability
Part 449	Existing and new primary airports with1,000 or more annual jet departures that discharge wastewater associated with airfield pavement deicing that contains urea commingled with stormwater	S	06/15/2012	**Does your facility have any discharges subject to this effluent limitation guideline?** No

Are you requesting permit coverage for any stormwater discharges subject to effluent limitation guidelines? No

Other Discharge Information

Does your facility discharge into a Municipal Separate Sewer System (MS4)? No

Receiving Waters Information

List all of the stormwater discharge points from your facility.

Discharge Point 00A: Outfall A

Applicable Sectors

Select the Sectors/Subsector(s) that apply to this discharge point.

	Sector	Subsector	SIC/Activity Code
☑	**S** - AIR TRANSPORTATION FACILITIES	**S1** - Air Transportation Facilities	4581

Latitude/Longitude: 41.6713°N, 70.2847°W

☐ **This discharge point is *Substantially Identical* to an existing discharge point.**

Receiving Water

GNIS Name: n/a

Waterbody Name: Upper Gate Pond

Listed Water ID: n/a

Is this receiving water saltwater or freshwater? Freshwater

Is this receiving water designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water)?

No

Will you have stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit? No

Benchmark Monitoring

Are you subject to benchmark monitoring requirements for a hardness-dependent metal? No

Impaired Waters Monitoring

NOTE: The information automatically populated in this section for determining if the receiving water is listed as impaired on the 303(d) list and in need of a TMDL, the cause(s) of the impairment if the receiving water is impaired on the CWA 303(d) list, if a TMDL has been completed for the receiving waterbody, and the TMDL ID and pollutants for which there is a TMDL may be outdated and inaccurate. It is recommended that you consult with your state's guidance for discharges into impaired waters to determine the correct pollutants and TMDLS and update the causes for the impairment and TMDL information accordingly.

Massachusetts Impaired Waters (IW) information and required monitoring parameters available at:

https://www.mass.gov/lists/integrated-lists-of-waters-related-reports (https://www.mass.gov/lists/integrated-lists-of-waters-related-reports)

https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf (https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf)

Where the Massachusetts monitoring guidance identifies one or more monitoring parameters that are different than the identified pollutant causing the impairment, indicate the monitoring parameter(s) as the pollutant(s) causing the impairment in the table below (select Yes for "Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL?" to display the pollutant table). Where the monitoring guidance indicates No Monitoring Required "NMR" for the pollutant causing the impairment, do not add a Cause of Impairment Group/Pollutant and delete any that were automatically populated in the table.

Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? No

Has a TMDL been completed for this receiving waterbody? No

Discharge Point 00B: Outfall B

Applicable Sectors

Select the Sectors/Subsector(s) that apply to this discharge point.

	Sector	Subsector	SIC/Activity Code
☑	**S** - AIR TRANSPORTATION FACILITIES	**S1** - Air Transportation Facilities	4581

Latitude/Longitude: 41.6693°N, 70.2837°W

☐ **This discharge point is *Substantially Identical* to an existing discharge point.**

Receiving Water

GNIS Name:
n/a

Waterbody Name:
Upper Gate Pond

Listed Water ID:
n/a

Is this receiving water saltwater or freshwater? Freshwater

Is this receiving water designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water)?

No

Will you have stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit? No

Benchmark Monitoring

Are you subject to benchmark monitoring requirements for a hardness-dependent metal? No

Impaired Waters Monitoring

NOTE: The information automatically populated in this section for determining if the receiving water is listed as impaired on the 303(d) list and in need of a TMDL, the cause(s) of the impairment if the receiving water is impaired on the CWA 303(d) list, if a TMDL has been completed for the receiving waterbody, and the TMDL ID and pollutants for which there is a TMDL may be outdated and inaccurate. It is recommended that you consult with your state's guidance for discharges into impaired waters to determine the correct pollutants and TMDLS and update the causes for the impairment and TMDL information accordingly.

Massachusetts Impaired Waters (IW) information and required monitoring parameters available at:

https://www.mass.gov/lists/integrated-lists-of-waters-related-reports (https://www.mass.gov/lists/integrated-lists-of-waters-related-reports)

https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf (https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf)

Where the Massachusetts monitoring guidance identifies one or more monitoring parameters that are different than the identified pollutant causing the impairment, indicate the monitoring parameter(s) as the pollutant(s) causing the impairment in the table below (select Yes for "Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL?" to display the pollutant table). Where the monitoring guidance indicates No Monitoring Required "NMR" for the pollutant causing the impairment, do not add a Cause of Impairment Group/Pollutant and delete any that were automatically populated in the table.

Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? No

Has a TMDL been completed for this receiving waterbody? No

Discharge Point 00C: Outfall C

Applicable Sectors

Select the Sectors/Subsector(s) that apply to this discharge point.

	Sector	Subsector	SIC/Activity Code
☑	**S** - AIR TRANSPORTATION FACILITIES	**S1** - Air Transportation Facilities	4581

Latitude/Longitude: 41.6695°N, 70.2834°W

☐ **This discharge point is *Substantially Identical* to an existing discharge point.**

Receiving Water

GNIS Name:
n/a

Waterbody Name:
Upper Gate Pond

Listed Water ID:
n/a

Is this receiving water saltwater or freshwater? Freshwater

Is this receiving water designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water)?

No

Will you have stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit? No

Benchmark Monitoring

Are you subject to benchmark monitoring requirements for a hardness-dependent metal? No

Impaired Waters Monitoring

NOTE: The information automatically populated in this section for determining if the receiving water is listed as impaired on the 303(d) list and in need of a TMDL, the cause(s) of the impairment if the receiving water is impaired on the CWA 303(d) list, if a TMDL has been completed for the receiving waterbody, and the TMDL ID and pollutants for which there is a TMDL may be outdated and inaccurate. It is recommended that you consult with your state's guidance for discharges into impaired waters to determine the correct pollutants and TMDLS and update the causes for the impairment and TMDL information accordingly.

Massachusetts Impaired Waters (IW) information and required monitoring parameters available at:

https://www.mass.gov/lists/integrated-lists-of-waters-related-reports (https://www.mass.gov/lists/integrated-lists-of-waters-related-reports)

https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf (https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf)

Where the Massachusetts monitoring guidance identifies one or more monitoring parameters that are different than the identified pollutant causing the impairment, indicate the monitoring parameter(s) as the pollutant(s) causing the impairment in the table below (select Yes for "Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL?" to display the pollutant table). Where the monitoring guidance indicates No Monitoring Required "NMR" for the pollutant causing the impairment, do not add a Cause of Impairment Group/Pollutant and delete any that were automatically populated in the table.

Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? No

Has a TMDL been completed for this receiving waterbody? No

Discharge Point 00D: Outfall D

Applicable Sectors

Select the Sectors/Subsector(s) that apply to this discharge point.

	Sector	Subsector	SIC/Activity Code
☑	**S** - AIR TRANSPORTATION FACILITIES	**S1** - Air Transportation Facilities	4581

Latitude/Longitude: 41.6697°N, 70.279°W

☐ **This discharge point is *Substantially Identical* to an existing discharge point.**

Receiving Water

GNIS Name:
n/a

Waterbody Name:
Lewis Pond

Listed Water ID:
n/a

Is this receiving water saltwater or freshwater? Freshwater

Is this receiving water designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water)?

No

Will you have stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit? No

Benchmark Monitoring

Are you subject to benchmark monitoring requirements for a hardness-dependent metal? No

Impaired Waters Monitoring

NOTE: The information automatically populated in this section for determining if the receiving water is listed as impaired on the 303(d) list and in need of a TMDL, the cause(s) of the impairment if the receiving water is impaired on the CWA 303(d) list, if a TMDL has been completed for the receiving waterbody, and the TMDL ID and pollutants for which there is a TMDL may be outdated and inaccurate. It is recommended that you consult with your state's guidance for discharges into impaired waters to determine the correct pollutants and TMDLS and update the causes for the impairment and TMDL information accordingly.

Massachusetts Impaired Waters (IW) information and required monitoring parameters available at:

https://www.mass.gov/lists/integrated-lists-of-waters-related-reports (https://www.mass.gov/lists/integrated-lists-of-waters-related-reports)

https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf (https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/msgp-2021-part-425-parameters-ma.pdf)

Where the Massachusetts monitoring guidance identifies one or more monitoring parameters that are different than the identified pollutant causing the impairment, indicate the monitoring parameter(s) as the pollutant(s) causing the impairment in the table below (select Yes for "Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL?" to display the pollutant table). Where the monitoring guidance indicates No Monitoring Required "NMR" for the pollutant causing the impairment, do not add a Cause of Impairment Group/Pollutant and delete any that were automatically populated in the table.

Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? No

Has a TMDL been completed for this receiving waterbody? No

SWPPP Information

Has the SWPPP been prepared in advance of filing this NOI, as required? Yes

SWPPP Contact Information:

First Name Middle Initial Last Name: Katie Servis

Phone: 5087752020 **Ext.:**

Email: katie.servis@town.barnstable.ma.us

SWPPP Availability:

Your current SWPPP or certain information from your SWPPP must be made available through one of the following three options. Select one of the options and provide the required information.

Note: you are not required to post any confidential business information (CBI) or restricted information (as defined in Appendix A (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_a_-_definitions.pdf)) (such information may be redacted), but you must clearly identify those portions of the SWPPP that are being withheld from public access.

☐ **Option 1: Attach a current copy of your SWPPP to this NOI.**

☐ **Option 2: Maintain a Current Copy of your SWPPP on an Internet page (Universal Resource Locator or URL).**

☑ **Option 3: Provide the following information from your SWPPP:**

A. Describe your onsite industrial activities exposed to stormwater and potential spill and leak areas.

e.g., material storage; equipment fueling, maintenance, and cleaning; cutting steel beams

Industrial activities exposed to stormwater include:- vehicle and aircraft operation, storage, and maintenance, fuel storage and transfer between on-site storage facilities, fuel delivery vehicles, mobile refuelers, aircraft, and ground support vehicles- deicing and washing of aircraft at designated deicing locations where residual deicing fluid and washwater is collected and discharged to a wastewater treatment facility- winter maintenance of pavement utilizing Federal Aviation Administration (FAA) approved sand

B. List the pollutants(s) or pollutant constituent(s) associated with each industrial activity exposed to stormwater that could be discharged in stormwater and/or in any authorized non-stormwater discharges listed in Part 1.1.3.

Vehicle and aircraft operation, storage, and maintenance - oil and grease, gasoline, aviation fuels, antifreeze, waste oilAircraft deicing and washing - propylene glycol, oil and grease, aviation fuel residuals, antifreeze, metalsWinter maintenance of pavement - suspended solids

C. Describe the control measures you will employ to comply with the non-numeric technology-based effluent limits required in Part 2.1.2 and Part 8, and any other measures taken to comply with the requirements in Part 2.2 Water Quality-Based Effluent Limitations (see Part 5.2.4).

Minimize exposure - storage of fuel, oil, and maintenance products, and waste products, is prohibited in areas exposed to stormwater. Deicing and aircraft washing is only allowed in designated areas where residual deicing fluid and washwater are collected and discharge to a wastewater treatment facility. Spill kits and containment measures are stationed at fuel transfer locations, and all fuel deliveries to the Airport fuel farm are monitored by Airport personnel. 100% of stormwater discharged to Upper Gate and Lewis Ponds is treated by a Vortechs hydronamic separator achieving greater than 80% total suspended solids removal prior to discharge. The Airport has implemented a Spill Prevention Control and Countermeasure (SPCC) Plan, and a Zero Discharge Policy that prohibits any discharge of vehicle or aircraft washwater to areas exposed to stormwater or areas that discharge to the facility stormwater system.

D. Provide a schedule for good housekeeping and maintenance (see Part 5.2.5.1) and a schedule for all inspections required in Part 4 (see Part 5.2.5.2).

Mobile refuelers and fuel storage facilities are inspected by the operator on a daily basis for any deficiencies and are removed from service if any deficiencies are observed. Good housekeeping measures are intended to be consistently implemented by the Airport and tenant operators on a daily basis. Discharge monitoring will be conducted by Airport personnel on a quarterly basis, and monthly during the deicing season (variable, typically November through March). Routine facility inspections will be conducted by Airport personnel on a quarterly basis, or more frequently to address any areas of significant activity (i.e., during airfield construction projects). At least one routine facility inspection per year will be conducted during a period when stormwater discharge is occuring. Maintenance of stormwater structures (i.e., sediment and debris removal) is conducted during the spring, and on a more frequent basis as necessary based on visual inspection of the stormwater structures.

Endangered Species Protection Worksheet: Criterion C1

The following questions will help you determine your eligibility under Part 1.1.4 of the permit with respect to protection of Endangered Species Act (ESA) species and critical habitat(s). Please refer to Appendix E (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_e_-_procedures_relating_to_endangered_species_protection.pdf) of the 2021 MSGP for important information regarding your obligations under this permit concerning ESA-protected species and critical habitat(s).

Determine ESA Eligibility Criterion

Are your industrial activities already addressed in another operator's valid certification of eligibility for your "action area" under eligibility criteria A, C, D, or E of the 2021 MSGP? No

Are your industrial activities the subject of a permit under section 10 of the ESA by the USFWS and/or NMFS, and this authorization addresses the effects of your facility's discharges and discharge-related activities on ESA-listed species and critical habitat?

No

You must determine whether species listed as either threatened or endangered under the Endangered Species Act, and/or their critical habitat are located in your facility's action area. ESA-listed species and critical habitat are under the purview of the NMFS and the USFWS.

Determine Your Action Area

Your "action area" (as defined in Appendix A (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_a_-_definitions.pdf)) includes all areas to be affected directly or indirectly by the action and not merely the immediate area involved in the action, including areas beyond the footprint of the facility that are likely to be affected by stormwater discharges, discharge-related activities, and authorized non-stormwater discharges. You must select and confirm that all the following are true:

- **In determining my "action area", I have considered that discharges of pollutants into downstream areas can expand the action area well beyond the footprint of my facility and the discharge point(s). I have taken into account the controls I will be implementing to minimize pollutants and the receiving waterbody characteristics (e.g. perennial, intermittent, ephemeral) in determining the extent of physical, chemical, and/or biotic effects of the discharges. I confirm that all receiving waterbodies that could receive pollutants from my facility are included in my action area.**

  True

- **In determining my "action area", I have considered that discharge-related activities must also be accounted for in determining my action area. I understand that discharge-related activities are any activities that cause, contribute to, or result in stormwater and authorized non-stormwater point source discharges, and measures such as the siting, construction, and operation of stormwater controls to control, reduce, or prevent pollutants from being discharged. I understand that any new or modified stormwater controls that will have noise or other similar effects, and any disturbances associated with construction of controls, are part of my action area.**

  True

Provide a written description of your action area and explain your rationale for the extent of the action area drawn on your map. Click here for an example.

The action area for the Cape Cod Gateway Airport's stormwater discharges extends from the facility to the discharge points located at Lewis Pond and Upper Gate Pond. The limit of the action area reflects the approximate distance at which the discharge and any pollutants would be expected to cause potential adverse effects to ESA-listed species and/or critical habitat because Lewis Pond and Upper Gate Pond are the only receiving waterbodies. The action area does not extend beyond these ponds, since there are no other direct hydrologic connections.

Attach a map of the action area for your facility. Mapping tool IPaC (the Information, Planning, and Consultation System) located at http://ecos.fws.gov/ipac/ (https://ecos.fws.gov/ipac/) or click here (/net-msgp/documents/action_area_example.pdf) for an example.

Name	Uploaded Date	Size
2021_Drainage Plan Layout.pdf (attachment/715527)	05/26/2021	4.10 MB

Determine if ESA-listed species and/or critical habitat are in your facility's action area.

ESA-listed species and critical habitat are under the purview of the NMFS and the USFWS, and in many cases, you will need to acquire species and critical habitat lists from both federal agencies.

National Marine Fisheries Service (NMFS)

To obtain NMFS-listed species and critical habitat information, use the resources listed below:

General Resources:
- NOAA Fisheries, Regions Page (https://www.fisheries.noaa.gov/regions)

For the Northeastern U.S.:
- NOAA Fisheries Greater Atlantic Region ESA Section 7 Mapper (https://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=1bc332edc5204e03b250ac11f9914a27)

For Puerto Rico:
- *Acropora* critical habitat map (https://www.fisheries.noaa.gov/resource/map/acropora-elkhorn-and-staghorn-coral-critical-habitat-map-and-gis-data)
- Green turtle critical habitat map (https://www.fisheries.noaa.gov/resource/map/green-turtle-critical-habitat-map-and-gis-data)
- Hawksbill Turtle critical habitat map (https://www.fisheries.noaa.gov/resource/map/hawksbill-turtle-critical-habitat-map-and-gis-data)

Western U.S.:
- West Coast Region Protected Resources App (https://www.webapps.nwfsc.noaa.gov/portal/apps/webappviewer/index.html?id=7514c715b8594944a6e468dd25aaacc9)

Pacific Islands:
- Contact the Pacific Islands Regional Office at (808) 725-5000 or pirohonolulu@noaa.gov (mailto:pirohonolulu@noaa.gov)

I have checked the webpages listed above and confirmed that: There are no NMFS-listed species and/or critical habitat in my action area.

U.S. Fish and Wildlife Service (USFWS)

To obtain FWS-listed species and critical habitat information, use the resources listed below:
- IPaC (the Information, Planning, and Consultation System) (https://ecos.fws.gov/ipac/)
- For instructions for using IPaC, click here.

I have checked the webpages listed above and confirmed that: There are FWS-listed species and/or critical habitat in my action area.

For FWS species, include the full printout from your IPaC query/Official Species List.

Name	Uploaded Date	Size
Species List_ New England Ecological Services Field Office.pdf (attachment/715517)	05/26/2021	194.57 KB

You may be eligible under **Criterion C.** You must assess whether your discharges and discharge-related activities are likely to adversely affect ESA-listed species or critical habitat, and whether any additional measures are necessary to ensure no likely adverse effects. In order to make a determination of your facility's likelihood of adverse effects, you must complete the Criterion C Eligibility fields below.

Criterion C Eligibility

Select which applies:

Criterion C1: Facility eligible for Criterion C in the 2015 MSGP with no change to ESA-listed species, critical habitat, or action area.
Your facility was eligible for Criterion C in the 2015 MSGP and there has been no change in your facility's action area and you have confirmed that there are no additional ESA-listed species or critical habitat under the jurisdiction of USFWS and/or NMFS in your action area since your certification under Criterion C in the 2015 MSGP. You must provide a description of the basis of this criterion selected on your NOI form and provide documentation supporting your eligibility determination in your SWPPP.

Select which applies:

I am seeking coverage under the MSGP as an existing discharger and my facility has modifications to its discharge characteristics (e.g., changes in discharge flow or area drained, different pollutants) and/or discharge-related activities (e.g., stormwater controls).

Provide a basis statement providing the USFWS and/or NMFS resources consulted that helped you determine that there are no additional ESA-listed species and/or critical habitat have been listed by under the jurisdiction of the Services in your action area.

Based on a review of information provided by the National Marine Fisheries Service (NMFS) and using the NOAA Fisheries Greater Atlantic Region ESA Section 7 Mapper, there are no listed threatened or endangered species or critical habitat in the designated action area. Based on a listed threatened and endangered species and critical habitat information request completed in the U.S. Fish and Wildlife Information, Planning, and Coordination (IPaC) system, there is one threatened species and one endangered species listed and no critical habitat designated for the action area. The Northern Long-eared Bat is listed as threatened and the American Chaffseed is listed as endangered. Slight drainage modifications were made to areas near the East Ramp of the Airport. All drainage changes made in 2021 did not result in any additional stormwater directed towards Lewis Pond or Upper Gate Pond.

Note: Any missing or incomplete information in this section may result in a delay of your coverage under the permit.

Historic Preservation: Criterion A

The following questions will help you determine your eligibility under Part 1.1.5 of the permit with respect to preservation of historic properties. You may still use the paper instructions in Appendix F (https://www.epa.gov/sites/production/files/2021-01/documents/2021_msgp_-_appendix_f_-_procedures_relating_to_historic_properties_preservation.pdf) of the MSGP in advance or in conjunction with answering the questions in this section of the form. For more information about your State Historic Preservation Office (SHPO) or Tribal Historic Preservation Office (THPO), please visit the National Park Service (NPS) websites at:

- **State Historic Preservation Office (SHPO) (https://www.nps.gov/subjects/nationalregister/state-historic-preservation-offices.htm)**
- **Tribal Historic Preservation Office (THPO) (https://www.nps.gov/history/tribes/Tribal_Historic_Preservation_Officers_Program.htm)**

Are you an existing facility that is resubmitting for certification under the 2021 MSGP? Yes

➜ **If you are an existing facility you should have already addressed National Historic Preservation Act (NHPA) issues. To gain coverage under the 2015 MSGP, you were required to certify that you were either not affecting historic properties or had obtained written agreement from the relevant SHPO or THPO regarding methods of mitigating potential impacts.**

Will you be constructing or installing any new stormwater control measures? No

You are eligible under **Criterion A**.

Certification Information

Form has not been certified yet.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To: May 26, 2021
Consultation Code: 05E1NE00-2021-SLI-3555
Event Code: 05E1NE00-2021-E-10665
Project Name: Cape Cod Gateway Airport

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2021-SLI-3555
Event Code: 05E1NE00-2021-E-10665
Project Name: Cape Cod Gateway Airport
Project Type: TRANSPORTATION
Project Description: Environmental Overview
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.670652863991194,-70.28344048034839,14z

Counties: Barnstable County, Massachusetts

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Flowering Plants

NAME	STATUS
American Chaffseed *Schwalbea americana* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1286	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

APPENDIX C

RECORD OF CHANGES

STORMWATER POLLUTION PREVENTION PLAN
CAPE COD GATEWAY AIRPORT
HYANNIS, MASSACHUSETTS
RECORD OF CHANGES

This Stormwater Pollution Prevention Plan has been prepared for the Cape Cod Gateway Airport. No alteration or revision shall be made to any part of this plan except at the direction of the Airport Manager. The Airport Manager shall update this plan as required, and shall ensure the timely update of all facility plans.

Date	Revision Number	Author of Revision	Approved By
11/1999	1	Edwards and Kelcey	John McDonald
3/2002	2	Edwards and Kelcey	Frank Sanchez
11/2003	3	Edwards and Kelcey	Quincy Mosby
12/2009	4	Horsley Witten Group	Roland Breault
7/2013	5	Horsley Witten Group	Roland Breault
9/2015	6	Horsley Witten Group	Katie Servis
12/2015	7	Horsley Witten Group	Katie Servis
04/2020	8	Horsley Witten Group	Katie Servis
05/2021	9	Horsley Witten Group	Katie Servis

APPENDIX D

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A • Sandwich, MA • 02563
Phone - 508-833-6600 • Fax - 508-833-3150 • *www.horsleywitten.com*

Spill Prevention, Control, and Countermeasure Plan

Barnstable Municipal Airport
Hyannis, Massachusetts

Revision 4, April 2020

Barnstable AIRPORT HYANNIS

Prepared for:

Barnstable Municipal Airport
480 Barnstable Road
Hyannis, Massachusetts 02601

Job # 14105

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS
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Appendix F. Spill Response Resource Inventory
Appendix G. Fuel Farm Inspection Sheets
Appendix H. Spill Response Products and Vendors

PREFACE - I

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN
EMERGENCY ACTION PLAN

BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

This Emergency Response Action Plan has been developed for the Barnstable Municipal Airport, 480 Barnstable Road, Hyannis, Massachusetts 02601 as a guide to assist in the response to releases of oil and/or hazardous materials to the environment.

1.0 EMERGENCY NOTIFICATION PHONE LIST

National Response Center (to report a release to navigable waters)
24-Hour Call Center: 800-424-8802

Massachusetts Department of Environmental Protection Emergency Response Center
24-Hour Call Center: 888-304-1133

Massachusetts State Police / Hyannis Fire Department
24-Hour Call Center: 911

Airport Rescue and Fire Fighting
24-Hour Call Center: 508-778-7770

Barnstable Fire District Water Department
(To report a spill on Water Dept. property located north of 15/33)
Office: 508-362-6498
Supt. Thomas Rooney (24-Hour): 508-364-9359

The Barnstable Municipal Airport Emergency Response Personnel include the following:

Spill Response Program Manager:

Katie Servis
Airport Manager
Barnstable Municipal Airport
508-775-2020

PREFACE – I

(continued)

Spill Response Coordinator:

Robert Holzman
Operations Supervisor
Barnstable Municipal Airport
508-778-7770 (24-hour contact number)

Local consultants and contractors to contact for spill response:

Licensed Site Professional:

Horsley Witten Group, Inc.
90 Route 6A
Sandwich, Massachusetts
508-833-6600

Bryan Massa, LSP
24-Hour Contact Number: 781-243-1527

Mark Nelson, LSP
24-Hour Contact Number: 508-566-0912

Spill Response Contractors:

Clean Harbors	800-645-8256
Moran Environmental Recovery	888-233-5338
Global Remediation	508-828-1005

Spill Response Materials/Equipment

A rapid spill response trailer is maintained at the Airport ARFF/SRE Building; a complete inventory of the trailer's contents is included as Appendix F in the SPCCP. Inventories are conducted regularly, and out-of-date equipment is replaced. A smaller spill kit is also maintained on each of the Airport's Mobile Refuelers, at the Gate F Fuel Farm, and at the Airport ARFF/SRE Building waste oil and anti-freeze storage AST. Each tenant involved in the storage or transfer of fuel is responsible for maintaining their own spill response resources on each of their vehicles and at fuel storage locations.

PREFACE – I

(continued)

2.0 IMMEDIATE ACTIONS

Spill response actions may include the following (as personnel safety allows)

1) Initiate evacuation, if necessary.
2) Notify Federal and State Emergency Response Personnel (see Section 1.0).
3) Stop spill flow when possible without risk of personal injury.
4) Contain the spill using whatever means readily available.
5) Make the spill location off limits to unauthorized personnel.
6) Restrict all sources of ignition when flammable substances are involved.
7) Report the release to the appropriate regulatory agencies (MassDEP, Fire Department, Airport Operations).

PREFACE – I

(continued)

3.0 RELEASE NOTIFICATION FORM

A. Incident Description

Date:_____ Reporter:_____
Time of Incident:_____ Time of Report:_____
Facility Name:_____
Facility Telephone #:_____
Location of Release:_____
Facility Location:_____
Street Address:_____
City/Town:_____

B. Release Description

Type of material(s) released:_____
Estimated quantity released:_____
Were there injuries to anyone on site?:_____
Did the release impact a catch basin or storm drain?:_____
Describe the ground surface that the release occurred over:_____
_____
Did the release enter or travel along underground utilities (pipes, conduit, etc.)?:
_____
How did the release occur?_____
_____
Other details:_____
_____

Are any surface waters impacted, or in danger of being impacted?
_____
_____

C. Spill Response Program Notification Requirements

IN THE EVENT OF ANY RELEASE, NOTIFY:

PROGRAM MANAGER KATIE SERVIS 508-775-2020

SPILL RESPONSE COORDINATOR ROBERT HOLZMAN 508-778-7770

BARNSTABLE MUNICIPAL AIRPORT RESCUE AND FIREFIGHTING 508-778-7770

PREFACE – I

(continued)

IF RELEASE IS LOCATED ON WATER DEPT. PROPERTY NORTH OF 15/33, NOTIFY:

SUPT. THOMAS ROONEY 508-364-9359

D. State and Federal Notification Requirements

Does Massachusetts Department of Environmental Protection (MassDEP) Require Notification?

- **A release of ≥ 10 Gallons Gas/Diesel/Oil requires MassDEP Notification**
- **A release of an unknown quantity requires MassDEP notification**

If required, notify Massachusetts DEP at 888-304-1133*

Does the USCG/Federal National Response Center (NRC) Require Notification?

- **A discharge to navigable waters requires USCG/NRC notification**
- **A sheen on water surface is considered a harmful quantity**

If required, notify USCG/NRC at 800-424-8802*

* **record any instructions/information from MassDEP or NRC in the space provided below.**

E. Generator Information

Generator/Responsible Party: _____
Street Address: _____
City/Town: _____State:_____
Contact Person: _____Title: _____
Contact Telephone Number: _____

F. Documentation of Notification
(Record time of agency/contact notification, instructions, reporting number, etc. here)

_____
_____
_____
_____
_____
_____

PREFACE – I

(continued)

4.0 REPORTABLE CONDITIONS

In accordance with Commonwealth of Massachusetts regulations, 310 CMR 30 and 310 CMR 40.0000, a release or threat of a release of a reportable quantity of oil and or hazardous materials must be reported to the MassDEP within two hours of obtaining knowledge of the release. Under MassDEP regulations 310 CMR 40.0000 a release of oil of **10-gallons or greater** is considered reportable. Contaminants detected in the environment at or above a certain concentration require reporting to the MassDEP, are listed in 310 CMR 40.1600. Refer to Appendix E of the Airport's SPCCP for forms to be completed during a spill event.

Federal reportable quantities for releases into soil, water and air are listed in Table 302.4 of 40 CFR 302.4. Each regulatory agency has these reportable quantities posted on its website (www.state.gov/dep; and www.epa.gov).

PREFACE - II

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN APPROVAL AND CERTIFICATION

BARNSTABLE MUNICIPAL AIRPORT HYANNIS, MASSACHUSETTS

MANAGEMENT APPROVAL

This oil and hazardous substances Spill Prevention, Control, and Countermeasure Plan and attached Emergency Response Action Plan has been carefully reviewed by Barnstable Municipal Airport Management. Management concurs with and supports the programs and procedures which are to be implemented, periodically reviewed, and updated in accordance with Federal Regulation 40 CFR 112.

Signature: _____

Katie Servis
Spill Response Program Manager
Airport Manager
Barnstable Municipal Airport

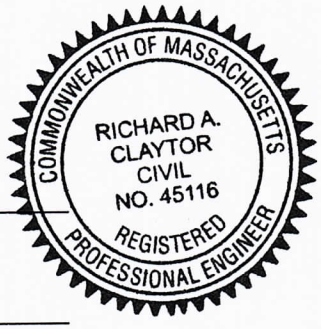
PROFESSIONAL ENGINEER CERTIFICATION

I hereby certify that I am familiar with the provisions of Federal Regulation 40 CFR 112 and attest that the Spill Prevention, Control, and Countermeasure Plan has been prepared in accordance with reasonable and prudent engineering practices, and satisfies the current requirements of the aforementioned regulation.

Name: Richard A. Claytor, Jr., P.E.

Signature: _____

Date: 4-29-2020



Registration Number: 45116

x

PREFACE - III

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN
RECORD OF CHANGES

BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

This Spill Prevention, Control, and Countermeasure Plan has been prepared for the Barnstable Municipal Airport. No alteration or revision shall be made to any part of this plan except at the direction of the Spill Response Program Manager. The Program Manager shall update this plan as required, and shall ensure the timely update of all facility plans.

Date	Revision Number	Section and Pages Changed	Author of Revision	Approved By
10/06	1	Plan Update	Horsley Witten Group, Inc.	FS
7/10	2	Tenant List Update	Horsley Witten Group, Inc.	FS
12/13	3	Plan Update	Horsley Witten Group, Inc.	FS
04/20	4	Plan Update	Horsley Witten Group, Inc.	KS

PREFACE - IV

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN
REGULATORY CROSS-REFERENCE WITH 40 CFR 112

BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

Regulatory Provision	Regulatory Requirement	Location in SPCCP
112.3 (d)	Professional Engineer Certification	Preface II
112.3 (e)	Location of SPCC Plan	Section 2.0
112.5	SPCC Plan review and amendment	Section 3.0
112.7	Facility Management approval	Preface II
112.7	Cross reference with 40 CFR 112	Preface IV
112.7 (a)(1)	Discussion of Facility conformance	Section 1.0
112.7 (a)(2)	Deviation from plan requirements	Not Applicable
112.7 (a)(3)	Facility physical layout and facility	Section 7.0,
112.7 (a)(3)(i)	Oil storage containers	Sections 8.0, 9.0 Figures 2 and 3
112.7 (a)(3)(ii)	Discharge prevention measures	Section 10.0
112.7 (a)(3)(iii)	Discharge or drainage controls	Section 10.0
112.7 (a)(3)(iv)	Countermeasures for discharge discovery, response, and cleanup	Section 12.0, 14.0
112.7 (a)(3)(v)	Methods of disposal of recovered	Section 12.1.1
112.7 (a)(3)(vi)	Emergency contact list	Section 13.1,
112.7 (a)(4)	Discharge reporting	Section 13.0,
112.7 (a)(5)	Discharge response procedures	Section 12.0
112.7 (b)	Potential discharge volumes and direction	Section 8.0, 9.0,
112.7 (c)	Containment and diversionary structures	Section 8.0, 9.0,
112.7 (d)	Demonstration of impracticability of secondary	Not Applicable
112.7 (e)	Inspections, Tests, and Records	Section 15.0

PREFACE – IV

(continued)

Regulatory Provision	Regulatory Requirement	Location in SPCCP
112.7 (f)(1)	Oil handling personnel trained in operation and maintenance of facility equipment to avoid a discharge, discharge procedures, applicable laws and regulations, and contents of SPCC Plan	Section 4.0
112.7 (f)(2)	Designate personnel at each applicable facility responsible for SPCC Plan compliance	Section 2.0
112.7 (f)(3)	Discharge prevention briefings for all oil-handling personnel	Section 4.0
112.7 (g)(1)	Applicable areas fully fenced when unattended	Section 7.3
112.7 (g)(2)	Flow and drain valves secured in closed position when not in operation	Appendix B
112.7 (g)(3)	Transfer controls secured in closed position when not in operation, accessible only by authorized personnel	Appendix B
112.7 (g)(4)	Transfer systems capped when not in operation	Appendix B
112.7 (g)(5)	Adequate facility lighting to observe a discharge and prevent vandalism	Section 7.3
112.7 (h)(1)	Quick drainage systems in lieu of catchment basin	Not Applicable
112.7 (h)(2)	Warning system to prevent vehicle departure prior to complete disconnection of flexible or fixed transfer lines	Appendix B
112.7 (h)(3)	Inspection of all transfer connections on vehicle prior to transfer	Appendix B
112.7 (i)	Brittle fracture evaluation	Section 15.5
112.7 (j)	Compliance with Applicable State and Local Requirements	Section 1.0
112.8 (b)	Facility drainage	Section 7.5
112.8 (c)(1)	Bulk storage container construction	Section 8.0, 9.0

PREFACE – IV

(continued)

Regulatory Provision	Regulatory Requirement	Location in SPCCP
112.8 (c)(2)	Secondary containment	Section 8.0, 9.0, 10.0
112.8 (c)(3)	Drainage of diked areas	Section 7.5
112.8 (c)(4)	Corrosion protection	Section 8.0
112.8 (c)(5)	Partially buried and bunkered storage tanks	Not Applicable
112.8 (c)(6)	Inspection and testing of aboveground storage tanks	Section 15.0
112.8 (c)(7)	Heating coils	Not Applicable
112.8 (c)(8)	Overfill prevention devices	Section 8.0
112.8 (c)(9)	Effluent treatment facilities	Not Applicable
112.8 (c)(10)	Visible discharges	Appendix B
112.8 (c)(11)	Mobile and portable containers	Section 8.0, 9.0
112.8 (d)	Transfer operations, pumping and in-plant	Section 8.0
112.20 (e)	Certification of Substantial Harm Determination	Appendix A

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

1.0 INTRODUCTION

Code of Federal Regulations 40, Subpart 112 (40 CFR 112) provides guidance for the development of Spill Prevention, Control, and Countermeasure Plans (SPCCP) and establishes procedures and methods to prevent the discharge of oil from non-transportation-related facilities into surface waters and adjoining shorelines. Additionally, Massachusetts State regulations (310 CMR 30.521(4)) require SPCCPs, with added requirements to comply with State 310 CMR 30 Hazardous Waste regulations. The Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Regulation 40 CFR 300.3, and the Resource Conservation and Recovery Act (RCRA) Regulation 40 CFR 264.52 expand the scope of the SPCCP to incorporate hazardous materials as defined in 40 CFR 302.3.

An SPCCP must be written and certified for an installation or commercial entity when both of the following criteria are met:

1. There is a reasonable potential for discharging oil into or upon navigable waters of the United States; and
2. The oil storage capacity on-site exceeds either:
    a. 42,000-gallons of total underground storage, or
    b. 1,320-gallons of total above-ground storage, or any single container having a capacity in excess of 660-gallons.

This SPCCP has been prepared for the Barnstable Municipal Airport, 480 Barnstable Road, Hyannis, Massachusetts 02601 (the "Airport"), due to the following:

1. There is a reasonable potential for discharging oil into or upon the waters of the United States, and
2. Above-ground fuel storage capacity exceeds 1,320-gallons, with a single container having a capacity in excess of 660-gallons.

2.0 SPCCP IMPLEMENTATION

This SPCCP is to be implemented by Airport employees and tenants. The Spill Response Program Manager (Program Manager) and Spill Response Coordinator (Coordinator) are

responsible, to the greatest extent possible, for ensuring employee and tenant awareness, program participation, and operational compliance with the guidelines provided in this SPCCP. Copies of the SPCCP are to be maintained in the Barnstable Municipal Airport (Airport) Management Office within the Main Terminal, the Aircraft Rescue and Fire Fighting/Snow Removal Equipment (ARFF/SRE) Building, and with the tenants identified in Section 7.2.

Spill Response Program Manager:
Katie Servis
Airport Manager
Barnstable Municipal Airport
508-775-2020

Spill Response Coordinator:
Robert Holzman
Operations Supervisor
508-778-7770 (24-hour contact number)

Effective spill prevention and response management is best facilitated through the designation of a Response Team representative (typically an owner, manager, or supervisor) for each Airport tenant operation involving the storage, transfer, or use of oil and/or hazardous materials (OHM). Response Team representatives are responsible for personnel training and maintaining operational compliance with the guidelines established in this SPCCP and described in further detail in Section 4.0 of this plan.

3.0 SPCCP REVIEW

If there is a change in the facility design, construction, operation, or maintenance which materially affects the potential for discharge of OHM into surface waters and adjoining shorelines, this SPCCP shall be amended in accordance with 40 CFR, parts 112.5 and 112.7. Amendments shall be implemented no later than 6 months after such changes occur. The Program Manager shall review and evaluate the SPCCP every five years. The Program Manager shall amend the SPCCP within 6 months of the five-year review to include more effective prevention and control technology, if available. No amendment to this SPCCP shall be effective to satisfy these requirements unless it has been certified by a Professional Engineer in accordance with 40 CFR 112.3(d). Statements of Airport Management Approval and Professional Engineer Certification, and a SPCCP Revision Log are included as prefaces to this plan. Amendments which do not significantly alter the potential for a discharge to occur, such as name and address revisions, do not require an Engineer's certification, however, all revisions shall be recorded in the SPCCP Revision Log.

4.0 RESPONSE TEAM DESIGNATION AND PERSONNEL TRAINING

The Coordinator shall designate a Response Team representative for each Airport tenant operation that involves the transport, use, or storage of OHM. Response Team members, along with the Coordinator, will be responsible for ensuring spill awareness among Airport and tenant employees, and operational compliance with the provisions of this SPCCP.

At a minimum, OHM-handling personnel shall be trained in the operation and maintenance of related facility equipment, facility discharge procedures, applicable laws and regulations, and the contents of the SPCCP. On an annual basis, the Coordinator shall conduct Discharge Prevention briefings for all oil-handling personnel, and include discussions of the SPCCP, any discharges within the past year, or changes to the Airport that might affect the potential for a discharge.

No provisions within this SPCCP, expressed or understood, relieve any tenant from providing response training to their employees, as required by Local, State and Federal regulations. Each Response Team Member shall provide the Coordinator with 24-hour contact information for inclusion in Section 7.2, and in the Airport's Emergency Response Action Plan (ERAP), described in Section 11.0.

5.0 SPCCP LIMITATIONS

This SPCCP provides information critical to the prevention of, and response to, releases of OHM at the Airport, and includes discussions of tenant operations, storage facilities, and transfer procedures. The Airport assumes no liability or responsibility for tenant operational compliance with applicable Local, State, and Federal Regulations, including the requirements established in 40 CFR 112, and described in this SPCCP. Tenants required to prepare and implement a SPCCP shall do so independently of this SPCCP.

6.0 APPLICATION OF SUBSTANTIAL HARM CRITERIA

Appendix C of 40 CFR 112 requires a facility to determine whether or not their facility is considered a "substantial harm facility." Certification of the applicability of the substantial harm criteria for the Airport is included as Appendix A. Substantial harm facilities are required to submit a Facility Response Plan to the Environmental Protection Agency's (EPA) Regional Administrator. The Airport is not considered a "substantial harm" facility and as such is not required to submit a Facility Response Plan to the EPA Regional Administrator.

7.0 FACILITY INFORMATION

7.1 Facility Description and Operations

The Airport provides commercial airline service and general aviation services to Boston, Cape Cod and the Islands of Martha's Vineyard, and Nantucket. The Airport began operations in 1928 and is the third largest and busiest airport in the Commonwealth of Massachusetts.

The Airport property consists of approximately 645 acres, approximately 142 are paved for use as taxiways, runways, and parking aprons. The Airport is bordered to the south by Barnstable Road (Route 132), to the west by Yarmouth Road, to the north by Route 6, and to the east by an industrial park (Independence Park). A locus map is included as Figure 1 and an aerial photograph identifying OHM storage locations at the Airport is included as Figure 2. Structures on Airport property include the Main Terminal and Air Traffic Control Tower (ATCT), several service and storage hangars, tenant facilities, and the Airport Rescue and Fire Fighting/Snow Removal Equipment Building (Airport ARFF/SRE). Airport property and structures located along runways 6 and 15 are commonly referred to as the East and North Ramps, respectively. A site plan detailing the structural layout of the Airport including stormwater drainage patterns and locations is included as Figure 3.

More than 40 tenant businesses operate on Airport property, providing industry-related services. Normal tenant operations include the maintenance and servicing of aircraft and associated aviation equipment, aviation fuel transfer, and general facility maintenance. Operations related to aircraft maintenance include engine maintenance, electronics repair, hydraulic system repair, aircraft washing, body repair, aircraft de-icing, and wheel and tire maintenance and repair. Ground vehicle operations and maintenance includes fluid changes, filter changes, refueling, brake repair, interior and exterior reupholstering, body repair, minor painting, and washing.

Airport Operations and Maintenance responsibilities include fuel transfer, traffic control, airport security, equipment operation and maintenance, facility maintenance and grounds-keeping. OHM use and storage at the Airport includes aviation fuel, gasoline, diesel, lubrication oil, motor oil, waste oil, deicing solutions, anti-freeze, paints, industrial chemicals and adhesives, compressed gases, solvents, and cleaning solutions.

Facilities maintenance operations include structural maintenance and repairs, airfield lighting and marking maintenance, painting, mowing, snow removal, and utility maintenance.

7.2 Tenant and Airport Operations Information

Current Airport Operations and tenant contact information are presented below.

Robert Holzman
Airport Operations Supervisor
480 Barnstable Road - 2nd Floor
Hyannis, MA 02601
508-778-7770

Helyne Medeiros
Rectrix Aerodrome Center, Inc.
Box 13 - 730 Barnstable Road
Hyannis, MA 02601
508-771-7520

Hildie Rios
Aviation Fuel Coordinator
480 Barnstable Road
Hyannis, MA 02601
508-778-7770

John Cahill
Hertz Car Wash
480 Barnstable Road
Hyannis, MA 02601
508-775-5825

Brad Everson
Airport Rescue Fire Fighting Coordinator
480 Barnstable Road - 2nd Floor
Hyannis, MA 02601
508-778-7770

Jody Lewis
Allies Air
550 Barnstable Road
Hyannis, MA 02601
508-364-5786

Robert Griffin
Griffin Avionics
630 Barnstable Road
Hyannis, MA 02601
508-771-2638

Peter Farrell
Cape Air / Nantucket Airlines
660 Barnstable Road
Hyannis, MA 02601
508-790-3122

Peter Greaves
AMA Nantucket Inc.
130 Mary Dunn Way
Hyannis, MA 02601
508-771-8273

Cape Flight Instruction
Edmund Cottle
150 Mary Dunn Way
Hyannis, MA 02601
508-274-2424

7.3 Facility Security

The Airport is manned on a 24-hour basis. Airport security is maintained through several means. Access to Airport property is restricted by a perimeter fence which is inspected daily. Unsupervised entry within the perimeter fence is limited to approved personnel who carry Airport-assigned identification. Facility security staffing includes personnel from Airport Security, the Hyannis Police Department, and the Transportation Security Administration (TSA). All fuel transfer and storage areas are located within the

main perimeter fence and access to these areas is therefore restricted to approved personnel. The Airport's Gate F Fuel Farm facility is also surrounded by an additional security fence and can only be accessed by approved personnel. The fuel transfer facility, Gate F Fuel Farm, and overnight staging areas for mobile refuelers are equipped with adequate lighting to aid in the observation of a release and deter any acts of vandalism.

7.4 Wastewater Management

With the exception of the ARFF/SRE building (Figure 3), all tenant facilities located on the East Ramp currently discharge sanitary wastewater to on-site septic systems. The ARFF/SRE building, South Ramp Deicing Pad and all structures located on the North Ramp of the Airport, including the Main Terminal, ATCT, and all other tenant facilities (Figure 3) discharge wastewater including sanitary waste to the Barnstable Wastewater Treatment Facility. Oil/water separators (O/WS) are located at the ARFF/SRE building, South Ramp Deicing Pad, Griffin Avionics, and Cape Air/Nantucket Air hangar and provide pre-treatment of floor drain discharge from each facility prior to discharge to the Barnstable Wastewater Treatment Facility. The Avis and Hertz Car Wash, located south of Barnstable Road on Airport property, also utilize O/WS to pre-treat vehicle wash-water that is subsequently discharged to the Barnstable Wastewater Treatment Facility. The locations of these tenants are included on Figure 3.

7.5 Stormwater Management

Stormwater management at the Airport is provided through several systems. The majority of paved surfaces within the perimeter fence, including all runways, discharge stormwater to a system that transports stormwater to one of two surface water bodies located on Airport property, Upper Gate and Lewis ponds (Figure 3). A number of catch basins are not connected to the main drainage system, and infiltrate stormwater at their respective locations or discharge stormwater to infiltration basins. A site plan, identifying Airport drainage areas, stormwater conveyances, surface water outfalls, and retention basins is included as Figure 3. O/WS used to pre-treat stormwater are located at the Gate F Fuel Farm and prior to Outfall A. Vortech® water quality units located prior to each of the outfalls discharging to Upper Gate and Lewis ponds provide pretreatment to all stormwater discharged to the ponds. Calculated total suspended solid (TSS) removal rates for the water quality units range from 81% to 87%. Since the installation of the Vortech® units in 2011, 100% of stormwater discharged to the ponds receives pretreatment.

7.6 Spill History

Facilities having experienced one or more spills within a year of the effective date of the SPCCP are required to describe each spill, any corrective actions taken, and plans for preventing recurrence. Two spills have occurred at the Airport in 2019, as described below. No other spills have occurred at the Airport within the past five years of the effective date of this plan (April 2020).

- In November 2019, a release of 51 gallons of Jet A fuel occurred at the Gate F Fuel Farm from a hand operated pump located within the concrete secondary containment structure (Figure 2). The hand pump was not fully closed after the previous use and was the source of the release. Due to a storm drainage valve being opened, the release drained from the secondary containment structure into an O/WS. Airport personnel responded to the spill and applied absorbents. Airport personnel notified the fire department and the MassDEP within two hours of identifying the release. Clean Harbors and a Licensed Site Professional responded to the release and pumped out and cleaned the O/WS, recovered absorbents, and cleaned the interior of the concrete secondary structure with a citrus based degreaser. The release was contained by the concrete secondary containment and the OW/S and there was no discharge of pollutants to stormwater and/or surface waters. Due to this incident, a new procedure was implemented by the Airport on November 26, 2019 for the operation of the hand pump and storm water drain value at the fuel farm. The new procedure is as follows:

<u>Hand Pump Operation</u>

- Prior to hand pump usage by Airport staff, verify that the stormwater drain valve located adjacent to the secondary containment structure is in the closed position.
- Operate hand pump as necessary to obtain fuel sample.
- After sample collection, verify hand pump is in the closed position.

<u>Stormwater Drain Valve Operation</u>

- Inspect the concrete secondary containment pad and both interior drainage sumps for visual and olfactory evidence of OHM. Collect a representative sample of accumulated rainwater in a clear container and record the observations on the inspection form. If no visual or olfactory indication of OHM is observed, the accumulated rainwater within the secondary containment is assumed to be free of OHM.
- Next, open the first manhole cover (marked “DRAIN”) in front of the Gate F Fuel Farm located between the storm water valve and the fuel farm. Cones

or other means to mark the open hole must be utilized. Collect a representative sample of accumulated rainwater from within the manhole in a clear container and record the observations on the inspection form. If no visual or olfactory indication of OHM is observed, the accumulated rainwater within the drain manhole is assumed to be free of OHM. The adjacent drain valve should then be opened, and the Airport staff member will monitor the draining of the open manhole and secondary containment as the water moves into the adjacent O/WS prior to discharging into the stormwater system.

  - Once the draining of the open manhole and secondary containment is completed, the drain valve is to be closed. Additionally, the manhole is to be closed.

- On December 21, 2019 a release of one to two gallons of jet fuel occurred at the Rectrix Aerodrome Center Hanger while refueling a Hawker 827TX aircraft (Figure 2). The release occurred to the asphalt paved ground surface from venting of the right wing. Rectrix personnel responded to the spill immediately by placing granular absorbents and using pads to mop up the spilled jet fuel and notified the Airport. The absorbent and pads were placed into a 55-gallon drum for future off-site disposal. The release was contained to the asphalt pavement and there was no discharge of pollutants to stormwater and/or surface waters. Considering the nature of the release, no change to the fueling procedures or release response is necessary.

8.0 STORAGE AND TRANSFER OF FUEL

Significant volumes of virgin petroleum are stored at several locations at the Airport within storage tanks. Details concerning virgin petroleum storage are provided in Table 1 and Table 2, and locations are set forth on Figures 2. The Airport is also subject to the requirements in Federal Aviation Administration (FAA) Advisory Circular 150/5230-4, Aircraft Fuel Storage, Handling, and Dispensing on Airports.

Table 1. Barnstable Municipal Airport Virgin Petroleum Storage

Operator	Location	Product	Tank Type	Spill Protection	Volume (Gallons)
Rectrix / Air Cape Cod	Gate P Fuel Farm	Avgas[3]	AST[1]	Overfill protection, double walled tanks, interstitial monitoring	10,000
		Jet A			10,000
Griffin Avionics	Griffin Fuel Island	Avgas[3]	UST[2]	Overflow protection, leak detection, double walled piping with sumps/sensors, and line leak detection	(2) 10,000
Cape Air	Inside Cape Air Hangar	Avgas[3]	Portable AST[1]	Spill Containment Pallet	100

Operator	Location	Product	Tank Type	Spill Protection	Volume (Gallons)
Hertz Car Rental	Barnstable Road – Service Lot	Unleaded Gasoline	UST	Double walled, In tank monitor	10,000
Barnstable Municipal Airport	Gate F Fuel Farm	Unleaded Gasoline	AST	Overfill protection, concrete secondary containment, interstitial monitoring	4,000
		Diesel	AST		4,000
		Jet A	AST	Overfill protection, concrete secondary containment pad, double walled tanks, interstitial monitoring	(3) 20,000

Notes:

[1] Aboveground Storage Tank

[2] Underground Storage Tank

[3] Aviation Gas

Virgin petroleum products are transported by Airport and tenant mobile refuelers for the purpose of refueling aircraft. Fuel delivery and transfer procedures are described in greater detail in Sections 8.1 and 8.2. Specific characteristics of each mobile refueler are provided in Table 2, below.

Table 2. Barnstable Municipal Airport Mobile Refuelers

Operator	Product	Spill Prevention Equipment	Truck Designation	Storage Capacity (Gallons)
Barnstable Municipal Airport	Jet A	All mobile refuelers are equipped with absorbents, drip pans, magnetic catch basin covers, and oil booms to respond to the most likely quantity of oil that could be discharged (<10 gallons) during refueling activities	5249	5,000
			5250	5,000
			5251	3,000
Rectrix / Air Cape Cod	Avgas		44219	1,500
Rectrix Aerodrome	Jet A		5693	3,000
Cape Air	Avgas		4298	1,500
Griffin Avionics	Avgas		612	620
			4134	1,200

8.1 Fuel Delivery

Detailed fuel delivery procedures for the Airport are included as Appendix C and are described in general below.

8.1.1 Jet A Fuel

Jet A fuel is currently stored at the Airport's Gate F Fuel Farm in three 20,000-gallon ASTs, and at Rectrix / Air Cape Cod's Gate P Fuel Farm in a 10,000-gallon AST. Details concerning spill protection are included above in Table 1. Vendor delivery of Jet A fuel at the Gate F Fuel Farm is coordinated and supervised by Airport personnel; fuel delivery at the Gate P Fuel Farm is coordinated and supervised by Rectrix / Air Cape Cod personnel. Flexible transfer lines, used for connecting fuel delivery trucks to the above-ground transfer manifolds at both locations, are inspected prior to each fuel transfer, and are replaced as necessary. Fuel deliveries are generally made during daylight hours; however, after-hours deliveries are conducted when necessary. Direct communication between the refueling agent and Airport personnel is maintained throughout the transfer. Prior to delivery, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the vendor fuel delivery truck and personnel shall ensure that spill response resources to clean up or contain a small spill are readily available.

Airport and Rectrix / Air Cape Cod personnel are responsible for the assessment of Jet A fuel quality at the time of delivery and for the inspection of all fuel transfer and containment equipment.

8.1.2 Aviation Gas

Aviation Gas (Avgas) is currently stored in two 10,000-gallon USTs located at Griffin Avionics and at Rectrix / Air Cape Cod's Gate P Fuel Farm in a 10,000-gallon AST. Details concerning spill protection are included above in Table 1. Avgas deliveries are made by several vendors for each receiving facility and are completed during normal business hours. Flexible transfer lines, used for connecting fuel delivery trucks to the transfer manifolds, are inspected prior to each fuel transfer, and are replaced as necessary. Direct communication between the delivery truck operator and tenant personnel is maintained throughout the transfer. Prior to delivery, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the vendor fuel delivery truck and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

In accordance with Federal Regulations 14 CFR 139, tenant operations involving the storage or transfer of Avgas must maintain personnel training programs. One supervisor from each refueling tenant must complete an aviation fuel training course at an approved FAA-sponsored fueling course. Following this training, supervisors shall train all other employees involved in storing, dispensing and handling fuel in fire safety. Records of employee training are maintained by the Airport Operations. Records of system checks and transfer equipment inspections are maintained by each tenant.

8.1.3 Unleaded Gasoline

Unleaded gasoline is currently stored in a 10,000-gallon UST located at Hertz Car Rental located at the Barnstable Road Service Lot and at the Gate F Fuel Farm in a 4,000-gallon AST. Details concerning spill protection are included above in Table 1. Direct connections between the delivery truck and the storage tank are accomplished through flexible transfer lines, which are inspected prior to each fuel transfer. Fuel flow during transfer is controlled by the delivery truck operator and incorporates a dead man switch. Delivery of unleaded gasoline to the Gate F Fuel Farm is supervised by Airport personnel. Prior to delivery, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the vendor fuel delivery truck and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

8.1.4 Diesel Fuel

Diesel fuel is currently stored at the Gate F Fuel Farm in a 4,000-gallon AST. Details concerning spill protection are included above in Table 1. Diesel fuel at the Gate F Fuel farm is used for the refueling of Airport service vehicles. Direct connections between the delivery truck and storage tank are accomplished through a flexible transfer line, which is inspected prior to each fuel transfer. Fuel flow during transfer is controlled by the tank truck operator and incorporates a dead man switch. Delivery of diesel is supervised by Airport personnel. Prior to delivery, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the vendor fuel delivery truck and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

8.2 Mobile Refueler Operations

Transfer of fuel between mobile refueling trucks and aircraft occurs regularly at the Airport and is described in further detail below. Standard procedures for the transfer of fuel to mobile refuelers operated by the Airport are included as Appendix C. Details concerning spill protection are included above in Table 2.

During normal hours of operation, tenant-operated refuelers are staged at each respective tenant's apron terminal, where aircraft refueling typically occurs. The Airport's Jet A mobile refuelers are staged along the paved access way behind the Airport Operations building on the East Ramp. Prior to fuel transfer or during extended vehicle parking, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the Mobile Refueler. Drip pans are also placed under the fuel rack and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

40 CFR 112.7(c) and 112.8(c) require all mobile or portable fuel containers to be designed, positioned, and operated within a means of containment allowing for any discharge to be contained. Rule change EPA-HQ-OPA-2005-0001; FRL-8007-2 relieves airport refuelers from the "sized" secondary containment requirements established in 40 CFR 112.8(c)(2) and (11). All refueling of aircraft occurs over impervious surfaces, allowing for any discharge to be properly contained using the spill response resources maintained on each refueler, at each fuel storage location, and in the spill response trailer at the Airport Operations building. An O/WS, described in further detail in Section 10.2, provides secondary containment for the paved apron area at the Gate F Fuel Farm. All transfers of fuel at the Gate F Fuel Farm occur over this paved apron area, including delivery and transfer to mobile refuelers.

8.2.1 Transfer of Jet A to Mobile Refuelers

The Airport and Rectrix currently operate Jet A mobile refuelers. Jet A is transferred to the Airport's mobile refuelers at the Gate F Fuel Farm, and to the Rectrix mobile refueler at the Gate P Fuel Farm. Details concerning spill protection are included above in Table 2. Airport personnel conduct daily inspections of all associated transfer equipment, including transfer hoses, flow control devices, and spill prevention devices, as required by 139 CFR 327. Annual tank testing and maintenance are completed by outside contractors. Records of daily and annual inspections are maintained by the Airport and tenant Fueling Agents. A mobile refueler daily inspection sheet utilized by Airport Operations personnel is included as Appendix D.

Loading of Jet A refuelers is accomplished through the use of flexible transfer lines. Fuel flow is controlled by a dead man switch, held by the operator. Airport and Rectrix personnel are responsible for the proper function and alignment of all fuel transfer equipment during transfer of Jet A to mobile refuelers. Prior to transfer, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the transfer vehicle and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

8.2.2 Transfer of Avgas to Tenant Mobile Refuelers

Fuel transfer of Avgas to tenant mobile refuelers occurs at both Rectrix / Air Cape Cod's AST and Griffin Avionic's USTs. Details concerning spill protection are included above in Table 2. Griffin and Cape Air refuel their refuelers at the Griffin fuel transfer station. Rectrix is the only tenant that utilizes the Avgas AST located at the Gate P Fuel Farm. All fuel transfers occur over well-lit, impervious surfaces, allowing for the observation and containment of any discharges. Transfer of fuel is performed using flexible transfer lines. Fuel flow to the refueler is controlled by a dead man switch, held by the refueler operator. Prior to transfer, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the transfer vehicle and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

8.2.3 Transfer of Jet A to Aircraft

Jet A Fuel is transferred to aircraft on non-movement taxiway apron areas and aircraft parking areas by Airport Operations and Rectrix mobile refuelers. Details concerning spill protection are included above in Table 2. Airport Operations personnel conduct all transfer of Jet A fuel to aircraft other than Rectrix. Prior to transfer, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the transfer vehicle and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

8.2.4 Transfer of Avgas to Aircraft

Griffin, Cape Air, and Rectrix personnel transfer Avgas to aircraft on non-movement apron areas and aircraft parking areas. Details concerning spill protection are included above in Table 2. Only trained tenant personnel, as described in Sections 4.0 and 8.1.2, are authorized to dispense Avgas fuel to aircraft. Prior to transfer, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the transfer vehicle and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

9.0 STORAGE OF OTHER OHM

Other OHM is stored at several locations at the Airport within containers ranging in size from less than 5-gallons to 500-gallons. Details concerning 55-gallon and larger containers of other OHM (non-fueling related products) are provided in Table 3, and OHM storage locations are included on Figure 2.

Table 3. Other Airport OHM Storage Locations

Operator	Location	Product	Storage Vessel Type	Spill Protection	Volume (Gallons)
Barnstable Municipal Airport	Outside Airport ARFF/SRE Building	Waste Oil / Anti-freeze	AST	Leak detection, double walled with reinforced concrete	350/150
	Inside Airport ARFF/SRE Building	Anti-freeze	Drums	Spill Containment Pallet	55
		Diesel Exhaust Fluid			
		15W40			
		Grease			
		Hydraulic Oil			
		ATF			
		5W30 SYN			
		Waste Oil			
Rectrix / Air Cape Cod	Gate P Fuel Farm	Waste Absorbent	Drums	Spill Containment Pallet with overhead cover	55
		Waste Jet A Fuel			
		Avgas			
Rectrix Aerodrome	Inside Rectrix Hangar	Jet A	AST	Double walled	55
		Reclaimable Jet A Fuel	Drums	Spill Containment Workstation with lid	55
		Waste Oil			
		Waste Absorbent			
Griffin Avionics	Inside Griffin Hangar	Used Oil filters	Drums	Spill Containment Pallet	55
		Waste Oil			
		Avgas			
Cape Air	Inside Cape Air Hangar	Waste Oil	AST	Overflow detection, double walled	500
		Waste Oil	Drums	Spill Containment Pallet	55
		Hydraulic Oil			
		Used Oil Filters			
		Anti-freeze			
Allies Air	Inside Allies Air Hangar	Waste Oil	Drums	Spill Containment Pallet	55
AMA Nantucket Inc.	Inside AMA Nantucket Inc. Hangar	Waste Oil	Drums	Spill Containment Pallet	55
		Mineral Spirits			
Cape Flight Instruction	Inside Cape Flight Instruction Hangar	Waste Oil	Drums	Spill Containment Pallet	55
		Anti-freeze			
		Used Oil Filters			
Avis Car Wash	Barnstable Road – Service Lot	Car Washer Fluid	AST	O/WS	250
Hertz Car Wash	Barnstable Road – Service Lot	Car Washer Fluid	AST	O/WS	250

Note: The total number of drums of OHM located in tenant facilities may vary. Proper secondary containment must always be provided for all drums of OHM and petroleum storage ASTs.

9.1 OHM Usage in Portable Containers

OHM including lubricants, cleaners, car washer fluid and anti-freeze is dispensed into small containers from hand dispensers connected to larger containers. The larger containers are located within the interior of the ARFF/SRE building, tenant hangars, Hertz Car Wash, and Avis Car Wash. Any floor drains located within the buildings are connected to O/WS and discharge to the municipal sewer system. Details on spill protection is included above in Table 3.

9.2 OHM Stored in Portable Containers for Disposal

OHM including waste lubricants, cleaners, and anti-freeze is placed into 55-gallon drums for future off-site disposal. The 55-gallon drums are located within the interior of the ARFF/SRE building and tenant hangars and are located within secondary containment. Floor drains located within the buildings are connected to O/WS and discharge to the municipal sewer system. It is estimated that at any given time the Airport and tenants could have approximately 50 to 75 55-gallon drums of various OHM stored within buildings. Details on spill protection is included above in Table 3.

10.0 SPILL PREVENTION AND POTENTIAL SPILL PATHWAYS

Where experience indicates a reasonable potential for the release of oil to the environment, 40 CFR 112.7(b) requires that a SPCCP predict a flow pathway for any released material. Sanitary waste is the only material discharged to septic systems. Floor drains located within buildings are connected to O/WS and/or the municipal sewer system. Potential discharge pathways for each fuel storage and transfer area and OHM container storage area are predicted below.

10.1 Rectrix / Air Cape Cod Fuel Farm

The Rectrix/Air Cape Cod Fuel Farm is located in Drainage Area K as indicated on Figure 3. Standard operating procedures for the delivery and dispensing of Avgas from Rectrix/ Air Cape Cod Gate P Fuel Farm should limit the likelihood of a release during fuel transfer. Vehicle traffic at the AST locations and associated transfer areas is restricted. The fuel farm is equipped with an emergency shut-off. Rectrix/Air Cape Cod maintain fire-fighting spill response resources at the fuel farm as well as on-board their mobile refueler. The fuel farm is also equipped with appropriate fire extinguishers.

In the event of primary containment failure in the ASTs at the Rectrix / Air Cape Cod Gate P Fuel Farm, Avgas would be contained within the secondary containment wall, and personnel would be alerted. In the event of secondary containment failure, or a discharge during transfer to or from the AST, Avgas would be released to the

environment. Release migration would most likely occur in a northwesterly direction over the paved apron surface, toward a stormwater catch basin which ultimately discharges into Lewis Pond. Rectrix personnel have been directed to quickly install a magnetic catch basin cover and take preliminary response actions to minimize release migration.

10.2 Gate F Fuel Farm

The Gate F Fuel Farm is located in Drainage Area C as indicated on Figure 3. The Gate F Fuel Farm was improved in 2016 by removal of the USTs and installation of three new 20,000-gallon ASTs containing Jet A aviation fuel. A 4,000-gallon diesel and a 4,000-gallon unleaded gasoline AST are also located in this area. The new fuel farm improvements include secondary containment and leak detection monitoring as well as a 110% secondary containment concrete pad, a shut off valve, and a new O/WS that connects to the existing storm drain system in the vicinity of the three 20,000-gallon ASTs.

The 4,000-gallon diesel AST and 4,000-gallon unleaded gasoline AST are located adjacent to the secondary containment pad associated with the 20,000-gallon ASTs. Both tanks are located within secondary containment and have overfill prevention devices. Fixed fuel transfer lines are wrapped in secondary containment fiberglass housings. The paved vehicle staging area adjacent to the ASTs features an O/WS and oil level alarm. The transfer area is well-lit to aid in the observation of a release. Additional details concerning spill protection are included above in Table 1.

In the event of a release of Jet A fuel during fuel transfer, release migration would occur over the concrete containment pad and into a concrete sump. The sump features petroleum detection technology which includes audible and visual alarms to signal the presence of oil in the structure. A discharge of fuel to the paved surface at the Gate F Fuel Farm will collect in an O/WS and can be removed by a cleanup contractor for proper disposal.

In the event of failure of the unleaded gasoline/diesel AST or pump station, released fuel would migrate over paved surfaces into an O/WS. The O/WS features a high oil level audible and visual alarms to signal the presence of petroleum within the structure. A discharge of fuel to the paved surface at the Gate F Fuel Farm will collect in the O/WS and can be removed by a cleanup contractor for proper disposal.

ARFF/OPS personnel conduct FAA required testing of the fuel from the Gate F Jet A ASTs and the Airport's mobile refuelers on a daily basis, generating approximately 5 gallons of sample fuel per day. Sample fuel is returned to the tank via a recycling system located within the fuel farm.

10.3 Barnstable Municipal Airport – Airport ARFF/SRE Building

The ARFF/SRE Building is located in Drainage Area M. A double walled split AST is located outside, adjacent to the Airport ARFF/SRE Building. The AST contains 350-gallons of waste oil and 150-gallons of anti-freeze. The AST includes a primary steel tank and secondary containment with reinforced concrete and leak detection.

In the event of primary containment failure in the AST, waste oil and/or anti-freeze would be contained within the secondary containment wall, and personnel would be alerted. In the event of secondary containment failure, or a discharge during transfer to or from the AST, waste oil and/or anti-freeze would be released to the environment. Release migration would most likely occur in an eastern direction over the paved apron surface, toward a grass area with a with a leaching catch basin with an underground discharge chamber. ARFF/OPS personnel have been directed to quickly install a magnetic catch basin cover and take preliminary response actions to minimize release migration.

10.4 Barnstable Municipal Airport - Emergency Generators

All emergency generators at the Airport have been converted to natural gas.

10.5 Griffin Avionics

Griffin Avionics is located within Drainage Area F. Standard operating procedures for the delivery and dispensing of Avgas from the Griffin Avionics USTs should prevent a release during fuel transfer. Additionally, overfill prevention in each tank's transfer manifold prevents the transfer of Avgas above the tank's capacity. Griffin maintains fire extinguishers and spill response resources at the fuel transfer station as well as on-board their mobile fuel trucks.

In the event of a release during fuel delivery, or fuel transfer to mobile refuelers, fuel released to the paved surface would migrate toward and could potentially enter leaching catch basins and/or the Airport's stormwater system which ultimately discharges to Upper Gate Pond. In the event of primary containment failure in the Griffin USTs, Avgas would be released to the soils and fill material around and below the UST.

10.6 Refueling of Aircraft

Standard operating procedures for aircraft refueling reduce the potential for a discharge. Refueling of aircraft occurs on taxiway apron areas on both the North and East Ramps. There are no spill prevention systems associated with the refueling of aircraft. A release during refueling would result in a release to the paved apron surface, where the discharge could be contained using available spill response resources. Airport and tenant mobile refuelers are required to be equipped with spill response kits as described in Table 2, above. Additionally, impacts to the Airport's stormwater drainage system are minimized by the placement of magnetic mats over storm drain inlets prior to refueling operations.

10.7 Hertz Car Wash

Unleaded gasoline is stored and transferred at the Hertz Car Wash, located directly across Barnstable Road from the Airport. In the event of primary containment failure in the Hertz UST, released fuel would be contained within the secondary containment wall. In the event of secondary containment failure, fuel would be released to the soils and fill material around and under the UST.

In the event of a release during fuel transfer at the Hertz service station, spilled fuel could potentially migrate over paved surfaces and enter infiltrating catch basins located in the service station lots.

11.0 EMERGENCY RESPONSE ACTION PLAN

An Emergency Response Action Plan (ERAP) is intended to provide easy access to instructions for Airport Response Team personnel in the event of a release. An ERAP will remain attached as a preface to this SPCCP and be distributed to Response Team members at the discretion of the Program Manager. The ERAP will be kept on file and updated as described in Section 3.0 of this SPCCP.

The ERAP shall contain the following information, and shall be constructed to facilitate and expedite response to a release of threat of release of OHM:

1. Facility name, address, and general location;
2. 24-hour contact information for each Response Team Member;
3. 24-hour contact information for the Spill Response Program Manager and Coordinator;
4. Local, State, and Federal Emergency Response contact information;
5. Recommended guidelines for spill abatement, response, etc.;
6. Location of spill response materials/equipment;

7. A site map that includes the following (Figure 2 and 3):
    a. floor-drain, manhole, sewer grate locations, etc.
    b. location of oil and hazardous materials bulk storage areas
8. Additional Response Resources Contact Information (e.g., LSP, outside spill cleanup contractor); and
9. Forms to aid in proper documentation and reporting of a release.

A copy of the ERP is included as Preface I.

12.0 SPILL RESPONSE PROCEDURES

In the event of a release, or threat of release of OHM to the environment, personnel shall implement response actions to contain the release. The Spill Response Coordinator or Program Manager shall be notified as soon as possible. The following response actions should be followed for most releases.

Note: Any personnel undertaking any response activity is responsible for ensuring that appropriate, properly fitted, personnel protective equipment (PPE) is worn at all times.

12.1 General Response Procedures for Airport and Tenant Employees

Note: Only properly trained Airport and Tenant employees shall respond to a release of oil or hazardous materials.

1. Initiate evacuation, if necessary;
2. Notify Spill Response Coordinator or Program Manager, listed in Section 2.0;
3. Stop spill flow when possible without risk of personal injury to self or others;
4. Immediately deploy any readily available response resources (e.g., absorbent pads, drain covers, granulated absorbent, etc.);
5. Make the release area off limits to unauthorized personnel;
6. Restrict all sources of ignition when flammable substances are involved;
7. Continue response actions at the direction of the Spill Response Coordinator or Program Manager; and
8. Ensure that all contaminated response resources and PPE are properly containerized and labeled for disposal by a licensed hazardous waste handler.

The sequence of the initial response action may be altered depending upon the spill characteristics (i.e., type of material, quantity). The following section describes Spill Response Coordinator and Program Manager responsibilities during response actions.

12.1.1 Spill Response Coordinator

Note: If the Program Manager is unavailable, the Coordinator is authorized to activate emergency response contractors, and initiate any regulatory reporting procedures.

1. Evacuate any non-essential personnel, if necessary;
2. Eliminate the source of the release, if not already accomplished, without jeopardizing the health and safety of self or others;
3. Report the release to the appropriate local contacts (Airport Fire Department, Hyannis Fire Department, Emergency Response Contractors, LSP). When notifying any outside agency of a release of oil or hazardous material the following information, at minimum, should be provided:
    a. Name of individual reporting spill;
    b. Release location and Contact information;
    c. Substance released, estimated amount;
    d. Date and Time of release;
    e. Description of response actions, undertaken and planned;
    f. Other agencies notified or to be notified; and,
    g. Any other relevant information.
4. Direct the deployment of response resources and ensure their proper use;
5. Minimize the potential for environmental impact;
6. Notify LSP and emergency response contractors (Section 13.1) if necessary;
7. Notify the Program Manager and inform them of the release. Determine if release requires MassDEP or Federal notification, as described in Section 13.0;
8. Ensure that all contaminated response resources and PPE are properly containerized and labeled for disposal in accordance with applicable local, state and federal regulations by a licensed hazardous waste handler; and
9. Properly document all response activities; including generator information, response personnel, emergency contractor information, and any related correspondence.

12.1.2 Spill Response Program Manager

1. Determine if the release requires notification, as described in Section 13.0;

2. Ensure proper notification of authorities and/or outside response contractors (Sections 13.0 and 13.1);
3. Ensure proper documentation of release and response activities; a Spill Reporting Form is included as Appendix E;
4. Retain Hazardous Waste Manifests or Bills of Lading from licensed hazardous waste handlers; and,
5. Take additional measures, as necessary, to minimize potential for subsequent environmental impact (e.g., install absorbent boom at stormwater outfalls to capture stormwater-transported contaminants).

13.0 NOTIFICATION REQUIREMENTS

In response to a release of oil or hazardous materials, responsible parties are required to conduct response activities in accordance with Massachusetts General Laws, Chapter 21E, 40 CFR 112, and the Massachusetts Contingency Plan (310 CMR 40.0000). Notification of Local, State, or Federal agencies may be necessary. All releases, regardless of size or material, shall be reported to the Spill Response Coordinator or Program Manager. Similarly, any release that occurs due to tenant operations on Airport property must be reported to the Spill Response Coordinator or Program Manager.

The Spill Response Coordinator or Program Manager shall establish whether a harmful quantity has been released, and if the release requires notification of outside agencies. Federal regulations generally define an oil spill of harmful quantity as "….such quantities of oil determined to be harmful to the public health or welfare…..to include discharges which exceed applicable water quality standards…….or cause a film or sheen on the surface of the water, or cause a sludge or emulsion to be deposited beneath the water surface". These regulations are applicable to all navigable waters of the United States, Upper Gate and Lewis ponds are both considered navigable waters.

Massachusetts regulations 310 CMR 40.0000 define a release of 10 gallons or greater of oil or gasoline as a reportable quantity and notification to the MassDEP is required within two hours of obtaining knowledge of the release. Contaminants detected in the environment at or above threshold concentrations also require reporting to the MassDEP and are listed in 310 CMR 40.1600. Additionally, a release of oil or hazardous materials to a stormwater conveyance (e.g., leaching catch basins, culverts) requires MassDEP notification, regardless of the volume of OHM.

In the event of a single discharge of more than 1,000 gallons into or upon the navigable waters of the U.S. or adjoining shorelines, or two discharges greater than 42 gallons

within any 12 month period, the SPCCP shall be submitted to the EPA Region 1 Regional Administrator and the MassDEP for review.

13.1 Reporting to State and Federal Agencies

In accordance with Massachusetts Regulations 310 CMR 30.0000 and 310 CMR 40.0000, certain releases or threats of releases of a reportable quantity of oil and or hazardous materials must be reported to the MassDEP within two hours (www.state.ma.gov/dep). Federal reportable quantities for releases into soil, water and air are listed in Table 302.4 of 40 CFR 302.4. Each regulatory agency has these reportable quantities posted on its website.

If a harmful or reportable quantity, as defined by state and/or federal regulations, has been discharged, the spill should be reported to the following agencies:

National Response Center
24 Hour: 800-424-8802

Massachusetts Department of Environmental Protection Emergency Response Center
24-Hour Call Center: 888-304-1133

Massachusetts State Police / Hyannis Fire Department
911

Airport Rescue and Firefighting
508-778-7770

Barnstable Fire District Water Department

(To report a spill on Water Dept. property located north of 15/33)
Office: 508-362-6498

Supt. Thomas Rooney (24-Hour): 508-364-9359

The following information must be provided to State and Federal agencies when a spill is reported. All correspondence with Local, State, or Federal agencies should be recorded on a Spill Reporting Form, included as Appendix E.

1. Name, location and type of facility;
2. Person in charge of facility and phone number;
3. Name and phone number of person reporting;
4. Type and estimated amount of material;

5. Location of spill;
6. Time and date of incident;
7. Impacted waterways;
8. Whether or not storm drains have been impacted;
9. Cause of incident and equipment involved;
10. Injuries and/or property damage;
11. Duration of discharge;
12. Response Actions taken; and,
13. Agencies notified.

In the event of a large or complex release of oil or hazardous materials, the Airport will rely upon outside cleanup contractors to conduct cleanup activities. Spill containment and cleanup contractors and regulatory consultants are listed below.

Spill Containment and Cleanup:

Clean Harbors	800-645-8256
Moran Environmental Recovery	888-233-5338
Global Remediation	508-828-1005

Licensed Site Professional:

Horsley Witten Group, Inc.	508-833-6600
Bryan Massa, LSP 24-Hour Contact Number:	781-243-1527
Mark Nelson, LSP 24-Hour Contact Number:	508-566-0912

14.0 SPILL RESPONSE RESOURCES

A rapid spill response trailer is maintained at the ARFF/SRE Building. A complete inventory of the trailer's contents is included as Appendix F. Inventories are conducted regularly, and out-of-date equipment is replaced. A smaller spill kit is also maintained on each of the Airport's Mobile Refuelers, at the Gate F Fuel Farm, and at the Airport ARFF/SRE Building waste oil and anti-freeze storage AST. Each tenant involved in the

storage or transfer of fuel is responsible for maintaining their own spill response resources on each of their vehicles and at fuel storage locations.

15.0 INSPECTIONS

The Airport conducts regular inspections of all OHM storage areas including fuel storage tanks, mobile refuelers, waste storage area, and drum storage areas. Inspections are conducted by properly trained Airport personnel and are recorded on inspection sheets. Inspection sheets are kept on file at the Airport Operations office for a minimum of three years, as required by 40 CFR 112.7. Mobile refueler and Gate F Fuel Farm inspection sheets are included as Appendix D and G.

15.1 Daily Inspections

On a daily basis, Airport personnel conduct inspections of Airport mobile refuelers and the Gate F Fuel Farm for the following:

Mobile refuelers are inspected for:

1. General Condition;
2. Filter Sumps;
3. Filter differential pressure;
4. Deadman control operation;
5. Brake Interlocks;
6. Nozzle fueling pressure
7. Hoses, Swivels and Nozzles;
8. Ground reels, cables, and clamps;
9. Fire extinguishers
10. Tanker troughs;
11. Tanker sumps;
12. Condensation in air tanks;
13. Ladders
14. Mechanics tools; and
15. Diesel fuel level.

The Gate F Fuel Farm is inspected for:

1. Tank sumps;

2. Fuel sumps;
3. Filter sumps;
4. Hoses, swivels, and nozzles;
5. Ground reels, cables, and clamps;
6. Fire extinguishers;
7. Waste fuel tanks;
8. Differential pressure; and
9. Primary pressure.

Hand Pump Operation

- Prior to hand pump usage by Airport staff, verify that the stormwater drain valve located adjacent to the secondary containment structure is in the closed position.
- Operate hand pump as necessary to obtain fuel sample.
- After sample collection, verify hand pump is in the closed position.

Stormwater Drain Valve

- Following a rain event, Inspect the concrete secondary containment pad and both interior drainage sumps for visual and olfactory evidence of OHM. Collect a representative sample of accumulated rainwater in a clear container and record the observations on the inspection form. If no visual or olfactory indication of OHM is observed, the accumulated rainwater within the secondary containment is assumed to be free of OHM.
- Next, open the first manhole cover (marked "DRAIN") in front of the Gate F Fuel Farm located between the storm water valve and the fuel farm. Cones or other means to mark the open hole must be utilized. Collect a representative sample of accumulated rainwater from within the manhole in a clear container and record the observations on the inspection form. If no visual or olfactory indication of OHM is observed, the accumulated rainwater within the drain manhole is assumed to be free of OHM. The adjacent drain valve should then be opened, and the Airport staff member will monitor the draining of the open manhole and secondary containment as the water moves into the adjacent O/WS prior to discharging into the stormwater system.
- Once the draining of the open manhole and secondary containment is completed, the drain valve is to be closed. Additionally, the manhole is to be closed.

15.2 Monthly Inspections

On a monthly basis, Airport personnel conduct inspections of Airport mobile refuelers and the Gate F Fuel Farm for the following:

Mobile refuelers are inspected for:

1. Filtration test;
2. Grounding cable continuity test;
3. Nozzle screens;
4. Signs and placards;
5. Meter seals;
6. Emergency shutdown system;
7. Tanker interiors;
8. Tanker vents and dome covers;
9. Tanker trough drains; and
10. Fire extinguishers.

The Gate F Fuel Farm is inspected for:

1. Grounding cable continuity;
2. Nozzle screens;
3. Signs and placards;
4. Floating suctions; and
5. Fire extinguishers.

15.3 Quarterly Inspections

On a quarterly basis, Airport personnel conduct inspections of Airport mobile refuelers and the Gate F Fuel Farm for the following:

Mobile refuelers are inspected for:

1. General condition;
2. Pressure controls;
3. Secondary pressure; and,
4. Water defense system.
5. The Gate F Fuel Farm is inspected for:

6. Tank high level controls;
7. Emergency shutdown system; and
8. Water defense system.

15.4 Annual Inspections

On a quarterly basis, Airport personnel conduct inspections of Airport mobile refuelers and the Gate F Fuel Farm for the following:

Mobile refuelers are inspected for:

1. Filter elements;
2. Pressure gauges; and
3. Fuel meters.

The Gate F Fuel Farm is inspected for:

1. Interior tank condition;
2. Pressure gauges;
3. Filter elements;
4. Line strainers;
5. Filter/separator heaters;
6. Tank vents;
7. Tank high level controls; and
8. Facility condition.

15.5 Additional Inspection and Maintenance

Annual cleaning and testing of fuel storage tanks are conducted by outside contractors. Tanks are inspected for wall thickness, corrosion, and tank integrity.

40 CFR 112.7(i) mandates; “If a field-constructed above ground container undergoes a repair, alteration, reconstruction, or a change in service that might affect the risk of a discharge or failure due to brittle fracture or other catastrophe, or has discharged oil or failed due to brittle fracture failure or other catastrophe, (the Airport) must evaluate the container for risk of discharge due to brittle fracture or other catastrophe, and as necessary, take appropriate action.”

15.6 PROACTIVE MEASURES AND RECOMMENDATIONS FOR SPILL PREVENTION AND SAFETY

To comply with the Local, State and Federal regulations cited in this Plan, the Airport and its Tenants will continue to incorporate spill prevention and safety measures into daily operations. Refer to Appendix H for examples of the spill response and safety equipment referenced below, and for a list of equipment vendors. The following are general recommendations:

- Storage locations for oil and/or hazardous materials will be indoors or otherwise protected from the environment, and, when feasible, within secondary containment capable of holding 110% of the volume of the largest container or tank.
- All flammables should be kept in a suitable storage locker or facility.
- Each facility should be equipped with enough spill response resources to respond to likely releases from aircraft maintenance, refueling, and fuel transfer.
- Each of the Airport operated mobile refuelers, as well as each fuel transfer depot, should be outfitted with magnetic catch basin covers, Speedi-dry™, a "pop-up pool" to contain a release of up to 65 gallons, and other approved response equipment.
- Quantities of hazardous materials should be kept to a minimum. Only frequently used hazardous materials should be kept in storage. Expired, obsolete, or otherwise unused hazardous materials should be disposed of properly.
- Empty drums and containers should be properly disposed of and not allowed to accumulate in bulk.
- Refueling and fuel transfer should only occur in areas that are covered by an impervious layer of asphalt or concrete.
- Waste oil storage by the Airport and its Tenants shall comply with Federal, State, and local regulations related to waste accumulation volume and time limits. Waste oil drums shall be clearly labeled, and all manifests kept on file for three years.

Indoor liquid hazardous materials should be stored in a location such that a spill from the largest container or tank will be contained or absorbed. All hazardous materials should be stored in flame retardant storage lockers and transferred to proper dispensing containers prior to use.

- Compressed gases should be stored in locations protected from vehicles traffic, including forklifts, by protective bollards or concrete walls or dikes.

- General waste should be separated from hazardous waste prior to disposal. Hazardous waste, including hazardous waste containers, should not be disposed of in general waste dumpsters.
- Safety Data Sheets (SDS) shall be posted in an area that is obvious to all employees in the case of an emergency (i.e. in area of use). SDSs shall be updated regularly. Emergency eyewash and shower stations shall be located in areas where oil and/or hazardous materials are used.
- Aircraft de-icing should only be performed in the designated area.
- Delivery of fuel from transport vehicles to storage tanks shall be supervised by a properly trained employee or supervisor.
- Transfer of fuel to mobile refuelers or aircraft shall only by conducted by properly trained employees.
- Whenever possible, biodegradable materials should be substituted for hazardous materials.

16.0 REFERENCES

Epsilon Associates, Inc. November 2004. Spill Pollution Control and Countermeasures Plan for Nantucket Memorial Airport, Nantucket, Massachusetts.

Federal Aviation Administration FAR 139 Airport Certification Manual, Barnstable Municipal Airport.

Horsley Witten Group, Inc. July 2003 (Revised). Spill Prevention Control and Countermeasures Plan, Barnstable Municipal Airport.

Massachusetts Department of Environmental Protection. April 3, 2006. Massachusetts Contingency Plan: Massachusetts Department of Environmental Protection, Bureau of Waste Site Cleanup, 310 CMR 40.0000.

Massachusetts Department of Environmental Protection. Massachusetts General Laws: Massachusetts Oil and Hazardous Material Release Prevention and Response Act, Chapter 21E.

Massachusetts Board of Fire Prevention Regulations. June 16, 2003. Massachusetts Comprehensive Fire Safety Code, Tanks and Containers, 527 CMR 9.00.

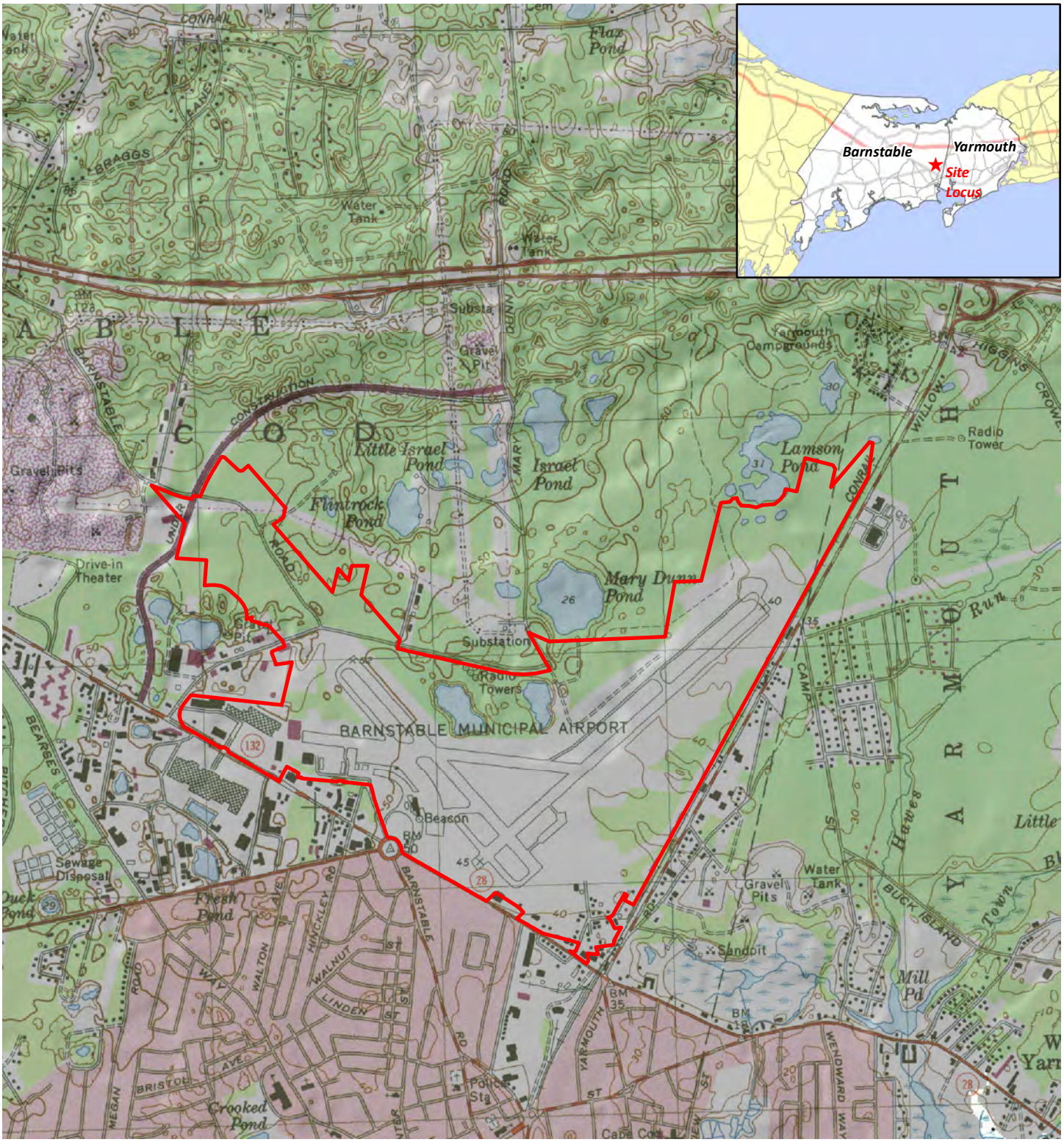
Massachusetts Department of Environmental Protection. See their homepage at www.state.ma.gov/dep

Massachusetts Department of Environmental Protection. 2000. Massachusetts Hazardous Waste Regulations: Massachusetts Department of Environmental Protection, 310 CMR 30.

U.S. Environmental Protection Agency. July 17, 2002. Environmental Protection Agency Federal Regulations 40 CFR 112.
U.S. Environmental Protection Agency, Oil Program. See their homepage at www.epa.gov/oilspill/

FIGURES

Figure 1 – USGS Locus
Figure 2 – Oil and Hazardous Materials Storage Map
Figure 3 – Site Plan



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*2016 NAIP imagery service

Legend

Barnstable Municipal Airport Property Boundary

N

0 2,000

1" = 2,000 feet

Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A • Unit 1 • Sandwich, MA 02563
508-833-6600 • horsleywitten.com

USGS Locus
Barnstable Municipal Airport
Hyannis, MA

Date: 11/18/2019 Figure 1

*Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Legend

Barnstable Municipal Airport Property Boundary

Mobile Refueler Parking Areas

Note:
AST = Above ground storage tank
UST = Underground Storage Tank
Avgas = Aviation Gas
LL = Low Lead
ARFF/SRE = Aircraft Rescue and Fire Fighting/Snow Removal Equipment

N

0 800

1" = 800 feet

Property = 645 acres

Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A • Unit 1 • Sandwich, MA 02563
508-833-6600 • horsleywitten.com

Oil and Hazardous Materials (OHM) Storage Map and Spill Locations Cape Cod Gateway Airport Hyannis, MA

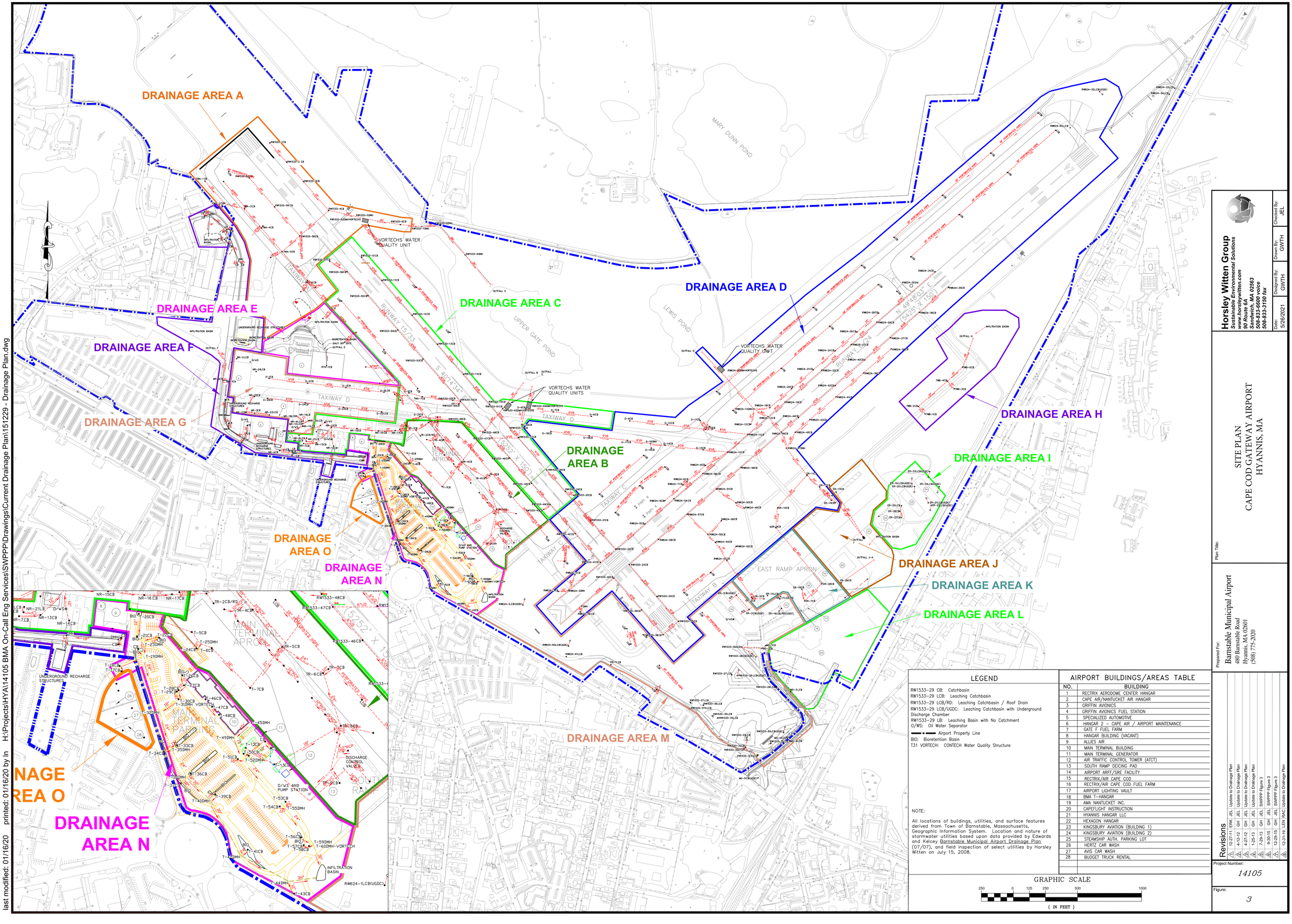
Date: 1/10/2020

Figure 2

**Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services*

**2016 NAIP imagery service*

Document Path: H:\Projects\HYA\14105 BMA On-Call Eng Services\GIS\Maps\191230_SPCCP OHM Storage Map.mxd



LEGEND

RW1533-29 CB: Catchbasin
RW1533-29 LCB: Leaching Catchbasin
RW1533-29 LCB/RD: Leaching Catchbasin / Roof Drain
RW1533-29 LCB/UGDC: Leaching Catchbasin with Underground Discharge Chamber
RW1533-29 LB: Leaching Basin with No Catchment
O/WS: Oil Water Separator
Airport Property Line
BIO: Bioretention Basin
T31 VORTECH: CONTECH Water Quality Structure

NOTE:

All locations of buildings, utilities, and surface features derived from Town of Barnstable, Massachusetts, Geographic Information System. Location and nature of stormwater utilities based upon data provided by Edwards and Kelcey Barnstable Municipal Airport Drainage Plan (07/07), and field inspection of select utilities by Horsley Witten on July 15, 2008.

AIRPORT BUILDINGS/AREAS TABLE

NO.	BUILDING
1	RECTRIX AERODOME CENTER HANGAR
2	CAPE AIR/NANTUCKET AIR HANGAR
3	GRIFFIN AVIONICS
4	GRIFFIN AVIONICS FUEL STATION
5	SPECIALIZED AUTOMOTIVE
6	HANGAR 2 – CAPE AIR / AIRPORT MAINTENANCE
7	GATE F FUEL FARM
8	HANGAR BUILDING (VACANT)
9	ALLIES AIR
10	MAIN TERMINAL BUILDING
11	MAIN TERMINAL GENERATOR
12	AIR TRAFFIC CONTROL TOWER (ATCT)
13	SOUTH RAMP DEICING PAD
14	AIRPORT ARFF/SRE FACILITY
15	RECTRIX/AIR CAPE COD
16	RECTRIX/AIR CAPE COD FUEL FARM
17	AIRPORT LIGHTING VAULT
18	BMA T-HANGAR
19	AMA NANTUCKET INC.
20	CAPEFLIGHT INSTRUCTION
21	HYANNIS HANGAR LLC
22	HEXAGON HANGAR
23	KINGSBURY AVIATION (BUILDING 1)
24	KINGSBURY AVIATION (BUILDING 2)
25	STEAMSHIP AUTH. PARKING LOT
26	HERTZ CAR WASH
27	AVIS CAR WASH
28	BUDGET TRUCK RENTAL

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

Horsley Witten Group
Sustainable Environmental Solutions
www.horsleywitten.com
90 Route 6A
Sandwich, MA 02563
508-833-6600 voice
508-833-3150 fax

Date: 5/26/2021 | Designed By: GWTH | Drawn By: GWTH | Checked By: JEL

Plan Title:

SITE PLAN
CAPE COD GATEWAY AIRPORT
HYANNIS, MA

Prepared For:
Barnstable Municipal Airport
480 Barnstable Road
Hyannis, MA 02601
(508) 775-2020

Revisions

1	12-27-11	ERK	JEL Update to Drainage Plan
2	4-12-12	GH	JEL Update to Drainage Plan
3	4-27-12	GH	JEL Update to Drainage Plan
4	1-25-13	GH	JEL Update to Drainage Plan
5	7-29-13	GH	JEL SWPPP Figure 3
6	9-30-15	GH	JEL SWPPP Figure 3
7	12-29-15	GH	JEL SWPPP Figure 3
8	12-31-19	LEN	RAC Update to Drainage Plan

Project Number: 14105

Figure: 3

last modified: 01/16/20 printed: 01/16/20 by ln H:\Projects\HYA\14105 BMA On-Call Eng Services\SWPPP\Drawings\Current Drainage Plan\151229 - Drainage Plan.dwg

APPENDIX A

CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA

Federal Regulation 40 CFR 112.20, Appendix C, requires a facility to certify whether or not it is considered to pose a substantial harm. A determination of substantial harm status is based on the criteria below.

Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

The facility does not transfer oil over water. The facility does have a total oil storage capacity greater than or equal to 42,000 gallons.

Does the facility have a total oil storage capacity greater than or equal to 1,000,000 gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground storage tank plus sufficient freeboard to allow for precipitation within any aboveground storage tank area?

No, the facility does not have a total oil storage capacity greater than or equal to 1,000,000 gallons.

Does the facility have a total oil storage capacity greater than or equal to 1,000,000 gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to 40 CFR 112, or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (see Appendix E to 40 CFR 112, section 13, for availability) and the applicable Area Contingency Plan.

No, the facility does not have a total storage capacity greater than or equal to 1,000,000 gallons.

Does the facility have a total oil storage capacity greater than or equal to 1,000,000 gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to 40 CFR 112, or a comparable formula) such that a discharge from the facility would shut down a public drinking water intake.

No, the facility does not have a total storage capacity greater than or equal to 1,000,000 gallons.

Does the facility have a total oil storage capacity greater than or equal to 1,000,000 gallons and has the facility experienced a reportable spill in an amount greater than or equal to 10,000 gallons within the last 5 years?

No, the facility does not have a total storage capacity greater than or equal to 1,000,000 gallons.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Signature: _____

Name:_____

Title:_____

Date:_____

APPENDIX B

RAINWATER INSPECTION FORM

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

RAINWATER INSPECTION FORM

After rain events, the Barnstable Municipal Airport is required to inspect the secondary containment structure at the Gate F Fuel Farm to ensure that retained rainwater will not cause a discharge as described in 40 CFR§ 112.1(b) upon release. As required by 40 CFR§ 112.8(c)(3)(iii), the Airport must keep adequate records of these inspections and events where drainage of uncontaminated rainwater from secondary containment occurs.

Following a rain event, an Airport staff member will perform an inspection of any standing water within the concrete secondary containment structure and both interior sumps. The inspection will include the collection of a representative rainwater sample in a clear container for visual and olfactory analysis for indications of oil and/or hazardous materials (OHM).

If no visual or olfactory evidence of OHM is observed within the sample, the Airport staff member will record the observations on the inspection form and will proceed with discharging accumulated rainwater from the concrete secondary containment structure and interior sumps. The Airport staff member must observe the entire drainage of accumulated rainwater. While draining is occurring, the Gate F Fuel Farm must not be utilized for fuel sample collection and/or fuel transfers. Upon completion, the Airport staff member **must** close the drain valve. Under no circumstance is the drain valve allowed to remain open after the rainwater discharge. Details for completing the accumulated rainwater discharge is set forth below.

- Complete a full walk around the Gate F Fuel Farm to inspect for any visual signs of a potential leak from the ASTs and confirm that the alarm monitoring system is operating properly. Inspect the concrete secondary containment pad and both interior drainage sumps for visual and olfactory evidence of OHM. Collect a representative sample of accumulated rainwater in a clear container and record the observations on the inspection form. If no visual or olfactory indication of OHM is observed, the accumulated rainwater within the secondary containment is assumed to be free of OHM.
- The drain valve should then be opened, and the Airport staff member will monitor the draining of the secondary containment as the water moves into the adjacent O/WS prior to discharging into the stormwater system.
- Once the draining of the secondary containment is completed, the drain valve is to be closed.

RAINWATER INSPECTION FORM

PERSONNEL COMPLETING INSPECTION:

INSPECTION PERSONNEL:	ORGANIZATION / TITLE:

INSPECTION DATE: _____ INSPECTION TIME: _____

CONFIRM INSPECTION COMPLETED FOR ACTIVE LEAKS / SIGNS OF POTENTIAL LEAKS.

FULL WALK AROUND OF FUEL FARM: _____
ALL SENSORS IN NORMAL ("GREEN") MODE: _____

VISUAL AND OLFACTORY ASSESSMENT OF RAINWATER IN SECONDARY CONTAINMENT STRUCTURES SHOULD BE RECORDED ON THIS RAINWATER INSPECTION REPORTING FORM. ALL RECORDS ARE TO BE MAINTAINED AT THE AIRPORT MANAGER'S OFFICE.

ASSESSMENT SUMMARY:

_____
_____
_____
_____
_____
_____
_____
_____

LOCATION	TIME:	COLOR:	ODOR:	CLARITY:	FLOATING SOLIDS:	SETTLED SOLIDS:	SUSPENDED SOLIDS:	FOAM:	OIL SHEEN:	OTHER INDICATORS
Secondary Containment Concrete Pad										
Interior Sumps										

TIME VALVE OPENED: _____ TIME VALVE CLOSED: _____

RAINWATER INSPECTION FORM IS TO BE STORED IN THE AIRPORT MANAGER'S OFFICE

APPENDIX C

FUEL DELIVERY AND TRANSFER PROCEDURES

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

FUEL DELIVERY AND TRANSFER PROCEDURES

The following general procedures should be followed during fuel delivery, transfer of fuel, and refueling of aircraft. Refer to the Airport's Fuel Fire Safety Training manual for additional descriptions of fuel transfer procedures.

Vendor Delivery of Fuel

1. The vendor driver shall coordinate delivery time with the appropriate Tenant supervisor and/or HYA personnel.
2. All paperwork associated with the order should be inspected prior to transfer to ensure delivery of proper fuel quantity and type.
3. Appropriately trained tenant and/or HYA personnel shall be present throughout entire fuel transfer.
4. Tenant and/or HYA personnel shall identify the appropriate storage tank for delivery, and identify/inspect all mechanisms or piping associated with the fuel transfer.
5. Tenant and Airport storage tanks should be inspected for capacity prior to fuel transfer.
6. All vehicles in the fuel transfer area shall be turned off, and sources of ignition eliminated.
7. A sample of the vendor fuel, for delivery, should be obtained in a suitable container. The sampled fuel should be inspected for color and odor. Results should be recorded and compared against original order.
8. The delivery vehicle should be parked within the designated fuel delivery area as directed by Airport personnel. Wheels should be chocked to prevent vehicle movement during transfer. Magnetic storm drain covers shall be placed on all catch basins within proximity of the delivery vehicle prior to fuel transfer.
9. A drip pan shall be placed under the fuel rack on the vendor fuel delivery truck.
10. During fuel transfer, at least one attendant shall be present at all times. There shall be no use of automated pumping systems.
11. The delivery vehicle shall be properly grounded and bonded, in accordance with the Airport's Fuel Fire Safety Training Manual.
12. The truck operator shall be responsible for making all connections between the truck and any piping involved in the fuel transfer. Both the operator and tenant or HYA personnel shall inspect transfer piping, prior to fuel transfer.

13. Spill response resources should be readily available, for cleanup or containment of small spills. The tenant or HYA personnel shall be responsible for the proper management of small spills.
14. The truck operator and tenant or HYA personnel shall be aware of all safety and fuel flow control devices, such as pump shut-off and “dead-man” switches.
15. Once fuel transfer has begun, the tenant or HYA personnel shall inspect all fittings, couplings, hoses, and associated transfer materials, for evidence of leaking.
16. In the event of a release, or threat of release, due to a failure in any of the fuel transfer equipment, fuel flow shall cease immediately, and appropriate response actions shall be taken to clean up the release.
17. Fuel transfer shall not occur unless all transfer equipment is being used as intended and approved.
18. Upon completion of fuel transfer, the truck operator shall ensure that all transfer lines are cleared of their contents before disconnect, so as to avoid any releases during disconnect.
19. Tenant or HYA personnel shall be responsible for the proper stowing of all facility transfer lines.
20. Any sample material, or absorbent materials used to clean up a small release shall be properly disposed of by a licensed disposal company. Proper paperwork shall be kept on file, and the Spill Response Coordinator or Program Manager notified.

Transfer of Fuel to Mobile Refuelers

1. Transfer of fuel to mobile refuelers shall be done by appropriately trained tenant and HYA personnel (the operator), only.
2. All fuel flow control devices, such as “dead-man” switches, shall be inspected for proper operation prior to fuel transfer.
3. All vehicles in the fuel transfer area shall be turned off, and sources of ignition eliminated.
4. The Mobile Refueler should be parked within the designated fuel delivery area as directed by Airport personnel. Wheels should be chocked to prevent vehicle movement during transfer. Magnetic storm drain covers shall be placed on all catch basins within proximity of the vehicle prior to fuel transfer.
5. A drip pan shall be placed under the fuel rack on the vehicle.
6. The operator shall ensure that spill response resources to clean up or contain a small spill are readily available.

7. The mobile refueler shall be properly grounded and bonded, in accordance with the Airport's Fuel Fire Safety Training Manual.
8. Fuel transfer equipment, including hose material and couplings, should of an appropriate material, and shall be inspected by the operator prior to use.
9. Transfer lines should implement dry-disconnect fittings and couplings that prevent the flow of fuel until properly connected to a mated coupling.
10. The operator shall be aware of all safety and fuel flow control devices, such as pump shut-off and "dead-man" switches.
11. The operator shall gauge mobile refueler tank capacity prior to fuel transfer, and monitor tank level during transfer.
12. Once fuel transfer has begun, the operator shall inspect all fittings, couplings, hoses, and associated transfer materials, for evidence of leaking.
13. During fuel transfer, at least one attendant shall be present at all times. There shall be no use of automated pumping systems.
14. In the event of a release, or threat of release, due to a failure in any of the fuel transfer equipment, fuel flow shall cease immediately, and appropriate response actions shall be taken to cleanup the release.
15. Fuel transfer shall not occur unless all transfer equipment is being used as intended and approved.
16. Upon completion of fuel transfer, the operator shall ensure that all transfer lines are cleared of their contents before disconnect, so as to avoid any releases during disconnect.
17. The Operator shall be responsible for the proper stowing of all facility transfer lines.
18. Any absorbent materials used to clean up a small release shall be properly disposed of by a licensed disposal company. Proper paperwork shall be kept on file, and the Spill Response Coordinator or Program Manager notified.

Transfer of Fuel to Aircraft

1. Transfer of fuel from mobile refuelers to aircraft shall be done by appropriately trained tenant and HYA personnel (the operator), only.
2. All fuel flow control devices, such as "dead-man" switches, shall be inspected for proper operation prior to fuel transfer.
3. All vehicles in the fuel transfer area shall be turned off, and sources of ignition eliminated.

4. Wheels should be chocked to prevent vehicle movement during transfer. Magnetic storm drain covers shall be placed on all catch basins within proximity of the vehicle prior to fuel transfer.
5. A drip pan shall be placed under the fuel rack on the vendor fuel delivery truck.
6. All fueling of aircraft shall be completed outside of hangars or maintenance buildings.
7. Personnel shall observe the locations of any stormwater catch basins and avoid refueling at or near such structures.
8. The operator shall ensure that spill response resources to clean up or contain a small spill are readily available.
9. The mobile refueler and aircraft shall be properly grounded and bonded, in accordance with the Airport's Fuel Fire Safety Training Manual.
10. Fuel transfer equipment, including hose material and couplings, should of an appropriate material, and shall be inspected by the operator prior to use.
11. Fuel transfer lines should be located, or "run-out" so as to avoid being run-over, or otherwise damaged, by vehicle traffic in the area.
12. Transfer lines should implement dry-disconnect fittings and couplings that prevent the flow of fuel until properly connected to a mated coupling.
13. The operator shall be aware of all safety and fuel flow control devices, such as pump shut-off and "dead-man" switches.
14. Before fueling, the operator shall ensure that all related aircraft equipment is prepared to accept transferred fuel.
15. While fuel is being transferred, the operator shall position themselves to visually observe transfer lines for leaks or other failures.
16. During fuel transfer, at least one attendant shall be present at all times. There shall be no use of automated pumping systems.
17. Once fuel transfer has begun, the operator shall inspect all fittings, couplings, hoses, and associated transfer materials, for evidence of leaking.
18. In the event of a release, or threat of release, due to a failure in any of the fuel transfer equipment, fuel flow shall cease immediately, and appropriate response actions shall be taken to clean up the release.
19. Fuel transfer shall not occur unless all transfer equipment is being used as intended and approved.
20. Upon completion of fuel transfer, the operator shall ensure that all transfer lines are cleared of their contents before disconnect, so as to avoid any releases during disconnect.

21. The Operator shall be responsible for the proper stowing of all facility transfer lines.
22. Any absorbent materials used to clean up a small release shall be properly disposed of by a licensed disposal company. Proper paperwork shall be kept on file, and the Spill Response Coordinator or Program Manager notified.

APPENDIX D

MOBILE REFULERS INSPECTION SHEET

DAILY [illegible]

AIRCRAFT FUELING EQUIPMENT CHECKS

STATION | EQUIPMENT ID# | MONTH | YEAR

DAILY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1. GENERAL CONDITION																															
2. FILTER SUMPS - RECORD RATINGS																															
3. FILTER DIFFERENTIAL PRESSURE - Record PSI																															
4. DEADMAN CONTROLS																															
5. SAFETY INTERLOCKS																															
6. NOZZLE FUELING PRESSURE - Record PSI																															
7. HOSES, NOZZLES & SWIVELS																															
8. STATIC REELS, CABLES & CLAMPS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9. LIFT PLATFORMS																															
10. FIRE EXTINGUISHERS																															
11. SURGE/WASTE TANKS																															
12. AIR TANKS																															
13. REFUELING TRUCK TROUGHS																															
14. REFUELING TRUCK SUMPS - RECORD RATINGS																															
15. REFUELING TRUCK BOTTOM LOADING PRE-CHECK																															
IDENDIFICATION OF PERSON PERFORMING TASKS OR PERSON ACCEPTING RESPONSIBILITY THAT TASKS WERE PERFORMED																															

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); NU = NOT USED; NA = NOT APPLICABLE

RATING OF SUMP SAMPLES: SOLIDS - 1 = CLEAN, 2 = SLIGHT, 3 = PARTICULATE, 4 = DIRTY; MOISTURE CONTENT - A = BRIGHT, B = HAZY, C = CLOUDY, D = WET (FREE WATER), E = SURFACTANTS

REMARKS:

ATA FORM 103.04A
2/16/04

RETAIN ON FILE FOR 12 MONTHS

Monthly Truck Check.

AIRCRAFT FUELING EQUIPMENT CHECKS

STATION	EQUIPMENT ID#	MONTH	YEAR

MONTHLY	CONDITION CODE	DATE	CHECKED BY
1. FILTRATION & FREE WATER TESTS			
2. STATIC SYSTEM CONTINUITY TEST (RECORD RESULTS)			
3. NOZZLE SCREENS			
4. FUEL HOSES			
5. SIGNS, LABELS & PLACARDS			
6. METER SEALS			
7. FIRE EXTINGUISHERS			
8. EMERGENCY SHUTDOWN SYSTEM			
9. DEADMAN CONTROL SYSTEM			
10. LIFT PLATFORMS			
11. REFUELING TRUCK INTERIORS			
12. REFUELING TRUCK VENTS & DOME COVERS			
13. REFUELING TRUCK TROUGH DRAINS			
Check First			

REMARKS:

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); N/U = NOT USED; N/A = NOT APPLICABLE

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103-64B
11/9/95

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QUARTERLY & ANNUAL FUEL CHECK.

QUARTERLY, SEMI-ANNUAL & ANNUAL AIRCRAFT FUELING EQUIPMENT CHECKS

STATION | EQUIPMENT ID# | YEAR

QUARTERLY CHECKS	1ST QTR	2ND QTR	3RD QTR	4TH QTR
1. VEHICLE INSPECTION — CONDITION CODE				
CHECKED BY & DATE:				
2. PRESSURE CONTROLS — CONDITION CODE				
RECORD PRIMARY & SECONDARY FUEL PRESSURE SETTING (PSI)				
CHECKED BY & DATE:				
3. WATER DEFENSE SYSTEM - EXTERNAL CHECK — CONDITION CODE				
CHECKED BY & DATE:				
4. INTERNAL VALVE CHECK — CONDITION CODE				
CHECKED BY & DATE:				

SEMI-ANNUAL FUEL FACILITY CHECKS (ONLY REQUIRED IF USING REUSEABLE COUPLINGS ON FUEL HOSES)	ID #	ID #	ID #	ID #	ID #
1. PERIODIC HOSE PRESSURE TEST					
TEST PRESSURE (PSI)	N/A				
CONDITION CODE					
CHECKED BY & DATE:					

ANNUAL CHECKS
1. FILTER ELEMENT CHANGE — CONDITION CODE
CHECKED BY & DATE:
2. FUELING & DIFFERENTIAL PRESSURE GAUGES — CONDITION CODE
CHECKED BY & DATE:
3. METER CALIBRATION — CONDITION CODE
CHECKED BY & DATE:
4. WATER DEFENSE SYSTEM INSPECTION & TES — CONDITION CODE
CHECKED BY & DATE:
REMARKS:

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); NIU = NOT USED; N/A = NOT APPLICABLE

ATA FORM 103.04C
11/9/05

RETAIN ON FILE FOR 12 MONTHS

Daily Sump LOG Trucks.

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HYA OPERATIONS

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MONTH_____ YEAR:_____

INSPECTION LOG OF AIRCRAFT FUEL SERVICING EQUIPMENT

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TANK	SUMP																				
FILTER	SUMP																				

		21	22	23	24	25	26	27	28	29	30	31
TANK	SUMP											
FILTER	SUMP											

TRUCK NO:_____

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TANK	SUMP																				
FILTER	SUMP																				

		21	22	23	24	25	26	27	28	29	30	31
TANK	SUMP											
FILTER	SUMP											

TRUCK NO:_____

Example: indicating sumped fuel was clear and bright done by J.Doe

NOTE Solids 1) clear 2) slight 3) particulate 4) dirty

Water a) bright b) hazy c) cloudy d) wet

0-07 form 10/98

QUARTERLY INSPECTION - MOBILE FUELERS

Airport: *HYA* Fueling Agent: _____

Date: ____/____/____ Inspector: _____

S - Satisfactory U - Unsatisfactory R - Remark Below	SERIAL #:			SERIAL #:			SERIAL #:		
	S	U	R	S	U	R	S	U	R
	JET A / AVGAS			JET A / AVGAS			JET A / AVGAS		
No Smoking sign in cab									
Flammability Signs/Haz Mat Placards all sides									
Bonding Cables and Clips functional									
Deadman Control for all nozzles									
2 Fire Extinguishers - Proper Type/ Inspected									
Emergency Shutoffs operable and marked									
No Fuel Leaks - Hoses/Gaskets/Valves									
Vehicle Exhaust System - Shielded/Leak free									
No evidence of Smoking- No ashtray in cab									
Vehicle Parking - 10' apart/50' from buildings									
Explosion proof electrical / Light lens intact									
Ignition Sources (Clothing, Shoes, Matches)									
Brake Interlock System									

Proper Fueling Procedures Observed				No. of Mobile Fuelers
Fueling Personnel Meet Training Requirements				Jet A _____
Fueling Personnel Training Records maintained				100 LL _____
				Other _____

Remarks:

APPENDIX E

RELEASE NOTIFICATION FORM

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

RELEASE NOTIFICATION FORM

A. Incident Description

Date:_____ Reporter:_____
Time of Incident:_____ Time of Report:_____
Facility Name:_____
Facility Telephone #:_____
Location of Release:_____
Facility Location:_____
Street Address:_____

B. Release Description

Type of material(s) released:_____
Estimated quantity released:_____
Were there injuries to anyone on site?:_____
Did the release impact a catch basin or storm drain?:_____
Describe the ground surface that the release occurred over:_____
_____
Did the release enter or travel along underground utilities (pipes, conduit, etc.)?:
_____
How did the release occur?_____
_____
Other details:_____
_____
Are any surface waters impacted, or in danger of being impacted?
_____
_____

C. Spill Response Program Notification Requirements

IN THE EVENT OF ANY RELEASE, NOTIFY:
PROGRAM MANAGER KATIE SERVIS 508-775-2020
SPILL RESPONSE COORDINATOR ROBERT HOLZMAN 508-778-7770
BARNSTABLE MUNICIPAL AIRPORT RESCUE AND FIREFIGHTING 508-778-7770
IF RELEASE IS LOCATED ON WATER DEPT. PROPERTY NORTH OF 15/33, NOTIFY:
SUPT. THOMAS ROONEY 508-364-9359

D. **State and Federal Notification Requirements**

Does Massachusetts Department of Environmental Protection (DEP) Require Notification?

- **A release of ≥ 10 Gallons Gas/Diesel/Oil requires DEP Notification**
- **A release of an unknown quantity requires DEP notification**

If required, notify Massachusetts DEP at 888-304-1133*

Does the USCG/Federal National Response Center (NRC) Require Notification?

- **A discharge to navigable waters requires USCG/NRC notification**
- **A sheen on water surface is considered a harmful quantity**

If required, notify USCG/NRC at 800-424-8802*

* **record any instructions/information from DEP or NRC in the space provided below.**

E. **Generator Information**

Generator/Responsible Party: _____
Street Address: _____
City/Town: _____State:_____
Contact Person: _____Title: _____
Contact Telephone Number: _____

F. **Documentation of Notification**
(record time of agency/contact notification, instructions, reporting number, etc. here)

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

APPENDIX F

SPILL RESPONSE INVENTORY

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

SPILL RESPONSE RESOURCE INVENTORY

The following items are maintained in a rapid response trailer, located outside the Airport Operations Building. The following quantities were accurate as of January 2020, the date of last inventory. Additional response resources are found on each mobile refueler, and at each fuel transfer depot.

Item	Quantity
Absorbent Spill Pads	200
Speedi-Dry ™	3.5 bags
Spaghetti Booms	(2) 10’ Booms
Pig Mats™ (for acids)	1 roll
Peat Absorbent	5 bags
Lite-Dri™ Absorbent	7 bags
Sea Booms	2
Oil-only Booms	6 rolls
Booms	2 rolls
Miscellaneous Booms	2 rolls
Kollect-a-Kem Pads™	100
Tear off Roll	(1) 25’ Boom
ARG-DRI™ Dikes	2 boxes
Face shields	12
ARG™ Pillows	24
Acid-Resistant PVC gloves	12 pair
Hard Hats	7
Boot covers	60
Tyvek™, x-large coverall	50
Tyvek™, large coverall	50
Tyvek™, medium coverall	50
Vinyl gloves	25
Grate covers	1
Drum patch kit	1
Coal shovel	1
Spade shovel	1
Squeegee	2
Push broom	1
Chocks	1 set
35-Gallon Drum	1

APPENDIX G

FUEL FARM INSPECTION SHEETS

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FUEL TANK

FUEL FACILITY CHECKS

STATION | FACILITY | MONTH | YEAR

DAILY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1. GENERAL CONDITION OF TANK YARD																															
2. SECURITY, FIRE & SAFETY DEFICIENCIES																															
3. HOSES, SWIVELS, NOZZLES & COUPLERS																															
4. STATIC REELS, CABLES AND CLAMPS																															
5. FIRE EXTINGUISHERS																															
FUEL LEAKS																															
STORAGE TANK SUMP																															
FILTER SUMP																															
FILTER DIFF. PRESSURE																															
IDENTIFICATION OF PERSON PERFORMING TASKS OR PERSON ACCEPTING RESPONSIBILITY THAT TASKS WERE PERFORMED																															

MONTHLY		DATE	SIGNATURE
1. FILTRATION & FREE WATER TEST			
2. BONDING CABLE CONTINUITY			
3. NOZZLE SCREENS			
4. SIGNS, LABELS & PLACARDS			
5. FLOATING SUCTION			

MONTHLY		DATE	SIGNATURE
6. FIRE EXTINGUISHERS			

CONDITION CODES:

S = SATISFACTORY
C = COMMENT
N/U = NOT USED
N/A = NOT APPLICABLE

NOTE - RECORD SUMP RESULTS & FILTER DIFFERENTIAL PRESSURE ON SEPARATE FORM.

REMARKS:

ATA FORM 103.01A
11/9/2005

RETAIN ON FILE FOR 12 MONTHS

FUEL FARM MONTHLY CHECK.

AIRCRAFT **FUEL FACILITY CHECKS**		STATION	EQUIPMENT ID#	MONTH YEAR
MONTHLY	CONDITION CODE	DATE	CHECKED BY	
1. FILTRATION & FREE WATER TEST				
2. STATIC SYSTEM CONTINUITY TEST				
3. NOZZLE SCREENS				
4. FUEL HOSES				
5. SIGNS, PLACARDS & LABELS				
6. METER SEALS				
7. FIRE EXTINGUISHERS				
8. EMERGENCY FUEL SHUTOFF SYSTEM				
9. LIFT PLATFORMS				
10. TANK INTERIORS				
11. TANK VENTS & DOME COVERS				
12. TANK TROUGH DRAINS				
REMARKS:				

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); NU = NOT USED; NA = NOT APPLICABLE

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103.04B
2/15/04

Figure 6-2.8. Form 103.04B - Monthly

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Quarterly Fuel Farm Check.

QUARTERLY FUEL FACILITY CHECKS

	STATION		FACILITY		QUARTER	YEAR
1. EMERGENCY SHUTOFF SYS.	ID #	ID #	ID #	ID #	ID #	ID #
DATE & CONDITION CODE						
CHECKED BY:						
2. WATER DEFENSE SYSTEMS						
DATE & CONDITION CODE						
CHECKED BY:						
3. TANK HIGH LEVEL CONTROLS						
DATE & CONDITION CODE						
CHECKED BY:						
4. RECLAIM TANK INSPECTION						
DATE & CONDITION CODE						
RECORD INSP. RESULTS ON 103.07						
CHECKED BY:						

SEMI-ANNUAL FUEL FACILITY CHECKS (ONLY REQUIRED IF USING REUSEABLE COUPLINGS ON FUEL HOSES)

1. PERIODIC HOSE PRESS. TEST	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #
TEST PRESSURE (PSI)										
DATE & CONDITION CODE	N/A									
CHECKED BY:										

REMARKS:

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); N/U = NOT USED; N/A = NOT APPLICABLE

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103.01C
11/9/05

Farm

ANNUAL FUEL FACILITY CHECKS

	STATION		FACILITY		YEAR	
1. STORAGE TANK INTERIORS	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #
DATE & CONDITION CODE										
CHECKED BY:										
2. DIFFERENTIAL PRESS GAUGES										
DATE & CONDITION CODE										
CHECKED BY:										
3. FILTER ELEMENTS										
DATE & CONDITION CODE										
CHECKED BY:										
4. FILTER/SEPARATOR HEATERS										
DATE & CONDITION CODE										
CHECKED BY:										
5. TANK VENTS										
DATE & CONDITION CODE										
CHECKED BY:										
6. CATHODIC PROTECTION										
DATE & CONDITION CODE										
CHECKED BY:										
7. LINE STRAINERS										
DATE & CONDITION CODE										
CHECKED BY:										
8. WATER DEFENSE SYSTEM										
DATE & CONDITION CODE										
CHECKED BY:										

REMARKS:

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); N/U = NOT USED; N/A = NOT APPLICABLE

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103.01D
11/9/05

QUARTERLY INSPECTION - FUEL STORAGE AREAS

Airport: *HYA* **Fueling Agent:** _____

Date: ____/____/____ **Inspector:** _____

S - Satisfactory U - Unsatisfactory R - Remark Below	Jet A Section			100LL Section			Other _____		
	S	U	R	S	U	R	S	U	R
Fencing / Locks / Signs									
Piping protected from vehicles									
No Smoking signs posted									
Deadman Controls for loading station									
2 Fire Extinguishers-Inspected/Accessible									
Boldly Marked Emergency Cutoffs-Location									
No Fuel Leaks									
Bonding wire/clips at loading stations/operable									
Piping / Pumps bonded & grounded									
No vegetation or materials to spread fire									
No evidence of Smoking									
Hoses in good condition									
Explosion Proof Electrical Equipment									

Remarks:

APPENDIX H

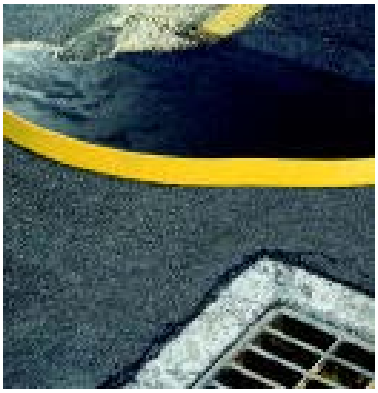
SPILL RESPONSE PRODUCTS AND VENDORS

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

SPILL RESPONSE PRODUCTS AND VENDORS

Storm Drain Hood

Magnetic Storm Drain Cover


Containment Berm

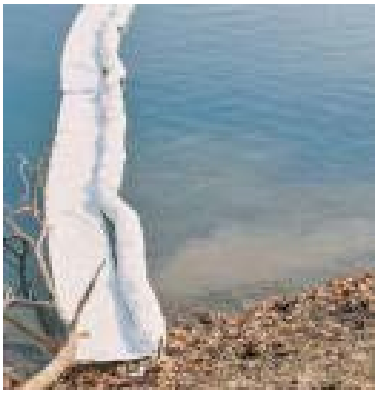
Collapsible Containment Pool

Loose Absorbent

Leak/Spill Containment

Secondary Containment

Portable Spill Kit



Absorbent Boom

Secondary Containment

Vendor Information:

New Pig Corporation
1-800-HOT-HOGS® (468-4647)
www.newpig.com

Arcus Absorbents, Inc.
1-877-227-6727
www.arcusabsorbents.com/

Interstate Products
1-800-474-7294
www.interstateproducts.com

West Coast Spill Supplies
1-888-548-3800
www.spillsupply.com/

SpillKits911
1-800-474-5911
www.spillkits911.com/

Guardian Environmental
1-860-350-2200
www.guardianenvironmental.com

Complete Environmental Products, Inc.
1-800-444-4237
www.cepsorbents.com/

Ben Meadows
1-800-241-6401
www.benmeadows.com

APPENDIX E

Aircraft Deicing and Washing Program

AIRCRAFT DEICING AND WASHING PROGRAM
BARNSTABLE MUNICIPAL AIRPORT
480 BARNSTABLE ROAD
HYANNIS, MASSACHUSETTS

1.0 INTRODUCTION

This Aircraft Deicing and Washing Program has been prepared for the Barnstable Municipal Airport (the Airport), 480 Barnstable Road, Hyannis, Massachusetts. The purpose of the Program is to establish procedures for Airport tenants to follow during aircraft deicing and washing at the Airport's South Ramp Deicing Pad. The Program is intended to protect groundwater and surface water resources at the Airport, and maintain compliance with local, state, and federal regulations.

Aircraft deicing activities at the Barnstable Municipal Airport (Airport) currently occur on a regular basis during the winter months at three designated deicing locations (Figure 1):

- South Ramp Deicing Area;
- Rectrix Aerodrome Facility Deicing Area; and
- East Ramp General Aviation Deicing Area.

Due to construction completion of the new South Ramp Deicing Pad in October 2015, the Rectrix Aerodrome and East Ramp General Aviation deicing areas were removed from active operations. The paved apron in the South Ramp Deicing Pad drains to a single, centrally located catch basin that discharges to the Barnstable Water Pollution Control Facility (WPCF) during aircraft deicing or washing. During all other times, this same catch basin discharges to the Airport's stormwater conveyance system that ultimately discharges to Upper Gate Pond. The discharge system is controlled through a series of manual gate valves that are operated by Airport Operations personnel. **Notification of Airport Operations prior to deicing or washing is required, to confirm that the system is discharging to the WPCF.**

Photo 1: Stormwater gate valve and operating position indicators.

PLEASE NOTE:
The South Ramp Deicing Pad is located within a "Secured Area." This Secured Area is regulated under TSAR 1542, and any enplaning and deplaning of passengers in this area during deicing operations is **strictly prohibited**.

The South Ramp Deicing and Washing Pad was constructed by the Airport to provide tenants and aircraft operators with a central location to complete these activities, and reduce the potential for environmental impacts. The Massachusetts Department of Environmental Protection (DEP), Cape Cod Commission (CCC), Barnstable Department of Public Works (DPW), and Barnstable WPCF have reviewed the construction plans and may conduct further review and/or inspection of the operations and record keeping procedures. Compliance with the procedures and requirements established in this Program is necessary to avoid increased oversight or potential penalties from these agencies.

2.0 TENANT AND OPERATOR TRAINING

It will be the responsibility of the Airport tenants to notify Airport Operations of their intent to deice or wash aircraft. Prior to using the South Ramp pad for deicing or washing aircraft, aircraft operators or tenants must attend a brief training session with Airport Operations to familiarize themselves with the system components and procedures.

3.0 DEICING FLUID AND DETERGENT FORMULATION AND MONITORING

Due to the decreased environmental impacts over alternative formulations, the Airport currently requires all tenants to utilize Type I propylene glycol based deicing fluids. The use of Type IV deicing fluids is currently being reviewed by the WPCF. Tenants will be notified if Type IV deicing fluids are approved for use. Types II and III deicing fluids are not commonly supplied for use by civilian air transportation airlines, and are prohibited from use at the Airport. Tenants are required to maintain Material Safety Data Sheets (MSDS), purchase orders, invoices, or other similar documentation sufficient to determine the classification of deicing fluid formulations in use, and provide copies of these records to the Airport Managers office prior to their use at the Airport.

In accordance with Barnstable WPCF requirements and the Airport's Stormwater Pollution Prevention Plan (SWPPP), each aircraft owner / tenant agent must maintain a record of the cumulative amount of deicing fluid used each day. The cumulative record should be stored with the deicing fluid equipment or at the hangar office. The volume of deicing fluid used during each calendar month shall be reported to the Airport Manager's office at the end of each month, or at any time Airport Management requests this information. A monthly log sheet is attached.

The Barnstable WPCF has designated the following detergents to be utilized during aircraft washing. **No other detergent products are permitted for use at this time**. An owner / tenant can submit an alternative detergent for review by the WPCF. Please contact Airport

Management for more information on the WPCF approval process. Each aircraft owner / tenant will be responsible for purchasing the approved detergent(s) for their own use. Detergents are to be applied in accordance with the manufacturer's recommendations and only at the specified dilution.

WPCF APPROVED DETERGENTS:

- SIMPLE GREEN™ AIRCRAFT AND PRECISION CLEANER

The South Ramp deicing and washing pad features an oil water separator (O/WS) and pump station with an integrated Mission pump monitoring system. During aircraft deicing or washing (when the pump station is in operation), the Mission pump monitoring system will notify the Barnstable WPCF. The Mission pump monitoring system and Airport Operations notification procedures described in Sections 4.0 and 5.0 are intended to provide a record log of activity for the deicing / washing pad. In the event that any issues are noted at the WPCF, the record log will be reviewed by Airport Management to identify potentially responsible parties. The Airport will not be held liable for any tenant activities, including any that may result from unauthorized use of the deicing pad, use of deicing or detergent products other than those specified here, or activities that are inconsistent with this Program. Unauthorized use of the deicing pad could result in harmful discharges to Upper Gate Pond or the Barnstable WPCF, and any responsible parties may be subject to penalties or enforcement actions from DEP, DPW, and/or the Barnstable WPCF.

4.0 AIRCRAFT DEICING PROCEDURES

The following procedures shall be followed by all aircraft owners and have been established to minimize potential impacts associated with deicing activities at the Airport and maintain compliance with Barnstable WPCF requirements.

- The deice pad will be closed immediately when snow accumulates on the pad, and will remain closed until any standing snow has been removed. The pad is included in the Priority 1 areas of the airport, these are the first areas cleared when snow removal operations are initiated. Tenants are notified of the deice pad status through the Snow Reports issued by Airport Operations on an as-needed basis during winter weather events. Airport Operations will confirm that standing snow has been removed prior to confirming the pad is open for deicing.
- **Prior to any aircraft entering the South Ramp deicing pad, the designated aircraft operator or tenant agent must notify Airport Operations.** Airport Operations will record the request in the daily log, noting the aircraft operator / tenant agent, aircraft call sign / registration number, date, and time of request. The operator must wait for confirmation from Airport Operations that the pad is open for deicing.
- **Airport Operations will log the time the valve for deicing or washing was opened on the appropriate valve use log.**
- The aircraft owner must immediately notify Airport Operations if an aircraft is disabled in the South Ramp Deicing Area. It is the aircraft owner's responsibility to ensure

prompt arrangements are made with Airport Operations or through their own resources to have the disabled aircraft removed from the Secure Area.

- After acknowledgement from Airport Operations, the aircraft operator shall park and adequately secure the aircraft within the demarcated area.
- Prior to any application of deicing fluid Airport Operations will close the manual gate valve labeled "Stormwater Discharge", and open the valve labeled "Deicing / Wash Discharge." Each of the gate valves features a visual indicator on the pavement surface to confirm proper orientation.
- The aircraft operator may then proceed with the application of deicing fluid on the aircraft. Deicing fluids shall be limited to those products that have received prior approval by Airport Management.
- Excessive use of deicing fluid is prohibited.
- After the aircraft has been deiced or washed, the aircraft operator / tenant agent shall notify Airport Operations that operations are complete. Airport Operations will log the notification.
- **Airport Operations will log the time the valve for deicing or washing was closed on the appropriate valve use log.**
- After the gate valves have been positioned to discharge to the airfield stormwater conveyance system, Airport Operations will log the operation.

5.0 AIRCRAFT WASHING PROCEDURES

The following procedures shall be followed by all aircraft owners and have been established to minimize potential impacts associated with aircraft washing activities at the Airport and maintain compliance with Barnstable WPCF requirements. Washing of aircraft is only permitted within tenant hangars that have permitted floor drains discharging to the Barnstable WPCF and/or at the South Ramp deicing / washing pad.

- The washing pad will be closed immediately when snow accumulates on the pad, and will remain closed until any standing snow has been removed. The pad is included in the Priority 1 areas of the airport, these are the first areas cleared when snow removal operations are initiated. Tenants are notified of the deice pad status through the Snow Reports issued by Airport Operations on an as-needed basis during winter weather events. Airport Operations will confirm that standing snow has been removed prior to confirming the pad is open for washing.
- **Prior to any aircraft entering the South Ramp washing pad, the designated aircraft operator or tenant agent must notify Airport Operations.** Airport Operations will record the request in the daily log, noting the aircraft operator / tenant agent, aircraft call sign / registration number, date, and time of request. The operator must wait for confirmation from Airport Operations that the pad is open for washing.
- **Airport Operations will log the time the valve for deicing or washing was opened on the appropriate valve use log.**

- The aircraft owner must immediately notify Airport Operations if an aircraft is disabled in the South Ramp Deicing Area. It is the aircraft owner's responsibility to ensure prompt arrangements are made with Airport Operations or through their own resources to have the disabled aircraft removed from the Secure Area.
- After acknowledgement from Airport Operations, the aircraft operator shall park and secure the aircraft within the demarcated area.
- Prior to any rinsing or application of detergent fluid, Airport Operations will close the manual gate valve labeled "Stormwater Discharge", and open the valve labeled "Deicing / Wash Discharge". Each of the gate valves features a visual indicator on the pavement surface to confirm proper orientation.
- The aircraft operator or tenant agent may then proceed with rinsing / washing the aircraft. Detergents shall be limited to those products that have received prior approval by Airport Management and the Barnstable WPCF.
- Washing of engine bays is prohibited.
- Upon completion, the aircraft operator / tenant agent shall notify Airport Operations. Airport Operations will log the notification.
- **Airport Operations will log the time the valve for deicing or washing was closed on the appropriate valve use log.**
- After the gate valves have been positioned to discharge to the airfield stormwater conveyance system, Airport Operations will log the operation.

The construction of the South Ramp Deicing and Washing Pad was completed by the Airport to provide tenants with a centralized location to conduct these activities, while reducing the potential environmental impact. Tenant compliance with the procedures and requirements established in this Program is necessary to avoid increased oversight or potential penalties from state and local regulatory agencies. Should you have any questions regarding any of these matters, please contact the Airport Manager's office.

Barnstable Municipal Airport (HYA) – Deice/Wash Pad Valve Log

Month: _____ Year: _____

Date	Time Valves Opened to WPCF	Time Valve Closed to WPCF	Date	Time Valve Opened to WPCF	Time Valve Closed to WPCF
1			17		
2			18		
3			19		
4			20		
5			21		
6			22		
7			23		
8			24		
9			25		
10			26		
11			27		
12			28		
13			29		
14			30		
15			31		
16					

Note: The deicing/wash pad valves must remain in position to discharge into the storm water system. Any time the valves are switched to discharge to the Barnstable Water Pollution Control Facility (WPCF) the operation must be logged, similarly the time the valves are returned to storm water must be logged.

APPENDIX F

NPDES – 1: ROUTINE FACILITY INSPECTION FORM

FORM NPDES – 1
ROUTINE FACILITY INSPECTION FORM

STORMWATER POLLUTION PREVENTION PLAN
CAPE COD GATEWAY AIRPORT
HYANNIS, MASSACHUSETTS

NPDES – 1: ROUTINE FACILITY INSPECTION FORM

Cape Cod Gateway Airport is required to document the findings of each routine facility inspection performed and maintain the documentation onsite with the Stormwater Pollution Prevention Plan (SWPPP) as required in Part 3.1.6 of the 2021 MSGP. Routine facility inspections shall be conducted by the Program Manager or Coordinator or designated staff at least four times a year, and monthly during the deicing season. The Airport is not required to submit routine facility inspection findings to EPA, unless specifically requested to do so.

INSPECTION DATE :_____

INSPECTION TIME :_____

PERSONNEL COMPLETING INSPECTION:
(Note: at least one member of the SWPPP Team is required to participate in Routine Facility Inspections)

INSPECTION PERSONNEL:	ORGANIZATION / TITLE:

WEATHER CONDITIONS AT TIME OF INSPECTION:
❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snow ❑ High Winds

❑ Other: Temperature:

Weather Previous 24 Hours:
❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snow ❑ High Winds

❑ Other: Temperature:

Weather Previous 72 Hours:
❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snow ❑ High Winds

❑ Other: Temperature:

AREAS OF INSPECTION:

FACILITY:	OBSERVATIONS / DEFICIENCIES:	RECOMMENDED ACTIONS:
Rectrix Hangar / Apron		
Cape Air Hangar / Apron		
Griffin Hangar / Apron		
Griffin Fuel Island		
Hangar II / Apron		
Gate F Fuel Farm		
Allies Air Hangar / Apron		
Former Ops Garage / Apron		
East Ramp Apron		
Main Terminal / Apron		
South Ramp Deicing Pad		
North Ramp Apron		
Budget Car Service Facility		
Hertz Car Service Facility		
Hertz Fuel Island		
Avis Car Service Facility		
ARFF Facility		
OPS Facility		
Rectrix /Air Cape Cod Hangar / Apron (East Ramp)		
Rectrix / Air Cape Cod Gate P Fuel Farm		
Cape Flight Instruction Hangar / Apron		
AMA Nantucket Inc.		
Hyannis Hangar / Apron		
Hexagon Hangar / Apron		
Steamship Authority Parking Lots		

OUTFALL:	DISCHARGE OBSERVED (YES / NO)	OBSERVATIONS / DEFICIENCIES:	RECOMMENDED ACTIONS:
Outfall A			
Outfall B			
Outfall C			
Outfall D			
Outfall E			
Outfall F			
Outfall H			
Outfall J			
Outfall J-A			

ROUTINE FACILITY INSPECTION SUMMARY:

Previously unidentified discharges of pollutants from the site:

_____

_____

Control measures needing maintenance or repairs:

_____

_____

Failed control measures that need replacement:

_____

_____

Incidents of noncompliance observed:

_____

_____

Additional control measures needed to comply with the permit requirements:

_____

_____

ALL RECORDS ARE TO BE MAINTAINED AT THE AIRPORT MANAGER'S OFFICE.

Certification Statement (Refer to MSGP Subpart 11 Appendix B for Signatory Requirements)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date Signed: _____

APPENDIX G

NPDES – 2: QUARTERLY VISUAL ASSESSMENT FORM

STORMWATER POLLUTION PREVENTION PLAN
CAPE COD GATEWAY AIRPORT
HYANNIS, MASSACHUSETTS

NPDES 2: QUARTERLY VISUAL ASSESSMENT FORM

On a quarterly basis, the Cape Cod Gateway Airport is required to collect a stormwater sample from each outfall and conduct a visual assessment of each sample. The visual assessment must be conducted by qualified personnel, with at least one member of the Airport's stormwater pollution prevention team participating.

Stormwater discharge samples must be collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes and the sampling personnel must document why it was not possible to take samples within the first 30 minutes. Stormwater discharge sampling shall not occur within 72 hours (three days) of a previous storm event. According to Section 3.2.4.3 of the MSGP, at least one quarterly visual assessment must capture snowmelt discharge. Any deviations from the schedule for visual assessments and/or monitoring must be documented, along with the reason for the deviations.

Visual Assessments include the visual inspection of the stormwater sample for color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollution.

PERSONNEL COMPLETING INSPECTION:
(Note: at least one member of the SWPPP Team is required to participate in Quarterly Visual Assessments)

INSPECTION PERSONNEL:	**ORGANIZATION / TITLE:**

INSPECTION DATE: _____
INSPECTION TIME: _____

WEATHER CONDITIONS AT TIME OF ASSESSMENT:

_____

_____

Time of Initial Discharge:

_____

Nature of Discharge (snowmelt, runoff):

_____

Weather Previous 24 Hours:

_____

Weather Previous 72 Hours:

_____

VISUAL ASSESSMENT OF OUTFALL DISCHARGE SAMPLES SHOULD BE RECORDED ON THE ATTACHED QUARTERLY VISUAL ASSESSMENT TABLE. ALL RECORDS ARE TO BE MAINTAINED AT THE AIRPORT MANAGER'S OFFICE.

QUARTERLY VISUAL ASSESSMENT SUMMARY:

_____
_____
_____
_____
_____
_____
_____
_____

Certification Statement (Refer to MSGP Subpart 11 Appendix B for Signatory Requirements)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date Signed: _____

STORMWATER POLLUTION PREVENTION PLAN Cape
CAPE COD GATEWAY AIRPORT
HYANNIS, MASSCHUSETTS
QUARTERLY VISUAL ASSESSMENT REPORTING FORM

OUTFALL LOCATION	TIME:	COLOR:	ODOR:	CLARITY:	FLOATING SOLIDS:	SETTLED SOLIDS:	SUSPENDED SOLIDS:	FOAM:	OIL SHEEN:	OTHER INDICATORS
Outfall A										
Outfall B										
Outfall C										
Outfall D										
Outfall E										
Outfall F										
Outfall H										
Outfall J										
Outfall J-A										

ALL QUARTERLY VISUAL ASSESSMENT RECORDS ARE TO BE MAINTAINED AT THE AIRPORT MANAGER'S OFFICE.

APPENDIX H

NPDES 3 - INDICATOR MONITORING REPORT FORM

MSGP Indicator Monitoring Report Form

Name of Facility:	Cape Cod Gateway Airport	NPDES Tracking No.	MAR053164

Sampling Location(s):

Person(s)/Title(s) collecting sample:

Person(s)/Title(s) examining sample:

Date & Time Sample Collected: (If sample is not taken within first 30 minutes, explain why.)

Nature of Discharge: ☐ Rainfall ☐ Snowmelt

Duration of Rainfall Event (hrs):	Rainfall amount for current event (in):	Time since the previous measurable storm event (days):

Previous Storm Ended > 72 hours Before Start of This Storm?	☐ Yes	☐ No* (If no, explain):

Indicator Monitoring Results

PAH Analytes	Units	Outfall								
		A	B	C	D	E	F	H	J	J-A
acenaphthene	-									
acenaphthylene										
anthracene										
benzo[a]anthracene										
benzo[b]fluoranthene										
benzo[k]fluoranthene										
benzo[a]pyrene										

benzo[g,h,i]perylene										
chrysene										
dibenz[a,h]anthracene										
fluoranthene										
fluorene										
indeno[1,2,3-c,d]pyrene										
naphthalene										
phenanthrene										
pyrene										

Include any additional comments, descriptions of pictures taken, and any corrective actions necessary below (attach additional sheets as necessary). If applicable, describe why it was not possible to take samples within the first 30 minutes of stormwater discharge. If applicable, describe any deviations to the monitoring schedule due to freezing conditions.

Certification Statement (Refer to MSGP Subsection 11 Appendix B for Signatory Requirements)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name:	B. Title:
C. Signature:	D. Date Signed:

Appendix M

Spill Prevention and Pollution Control Plan

Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A • Sandwich, MA • 02563
Phone - 508-833-6600 • Fax - 508-833-3150 • *www.horsleywitten.com*

Spill Prevention, Control, and Countermeasure Plan

Barnstable Municipal Airport
Hyannis, Massachusetts

Revision 4, April 2020

Barnstable AIRPORT HYANNIS

Prepared for:

Barnstable Municipal Airport
480 Barnstable Road
Hyannis, Massachusetts 02601

Job # 14105

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS
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PREFACE - I

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN
EMERGENCY ACTION PLAN

BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

This Emergency Response Action Plan has been developed for the Barnstable Municipal Airport, 480 Barnstable Road, Hyannis, Massachusetts 02601 as a guide to assist in the response to releases of oil and/or hazardous materials to the environment.

1.0 EMERGENCY NOTIFICATION PHONE LIST

National Response Center (to report a release to navigable waters)
24-Hour Call Center: 800-424-8802

Massachusetts Department of Environmental Protection Emergency Response Center
24-Hour Call Center: 888-304-1133

Massachusetts State Police / Hyannis Fire Department
24-Hour Call Center: 911

Airport Rescue and Fire Fighting
24-Hour Call Center: 508-778-7770

Barnstable Fire District Water Department
(To report a spill on Water Dept. property located north of 15/33)
Office: 508-362-6498
Supt. Thomas Rooney (24-Hour): 508-364-9359

The Barnstable Municipal Airport Emergency Response Personnel include the following:

Spill Response Program Manager:

Katie Servis
Airport Manager
Barnstable Municipal Airport
508-775-2020

PREFACE – I

(continued)

Spill Response Coordinator:

Robert Holzman
Operations Supervisor
Barnstable Municipal Airport
508-778-7770 (24-hour contact number)

Local consultants and contractors to contact for spill response:

Licensed Site Professional:

Horsley Witten Group, Inc.
90 Route 6A
Sandwich, Massachusetts
508-833-6600

Bryan Massa, LSP
24-Hour Contact Number: 781-243-1527

Mark Nelson, LSP
24-Hour Contact Number: 508-566-0912

Spill Response Contractors:

Clean Harbors	800-645-8256
Moran Environmental Recovery	888-233-5338
Global Remediation	508-828-1005

Spill Response Materials/Equipment

A rapid spill response trailer is maintained at the Airport ARFF/SRE Building; a complete inventory of the trailer's contents is included as Appendix F in the SPCCP. Inventories are conducted regularly, and out-of-date equipment is replaced. A smaller spill kit is also maintained on each of the Airport's Mobile Refuelers, at the Gate F Fuel Farm, and at the Airport ARFF/SRE Building waste oil and anti-freeze storage AST. Each tenant involved in the storage or transfer of fuel is responsible for maintaining their own spill response resources on each of their vehicles and at fuel storage locations.

PREFACE – I

(continued)

2.0 IMMEDIATE ACTIONS

Spill response actions may include the following (as personnel safety allows)

1) Initiate evacuation, if necessary.
2) Notify Federal and State Emergency Response Personnel (see Section 1.0).
3) Stop spill flow when possible without risk of personal injury.
4) Contain the spill using whatever means readily available.
5) Make the spill location off limits to unauthorized personnel.
6) Restrict all sources of ignition when flammable substances are involved.
7) Report the release to the appropriate regulatory agencies (MassDEP, Fire Department, Airport Operations).

PREFACE – I

(continued)

3.0 RELEASE NOTIFICATION FORM

A. Incident Description

Date:_____ Reporter:_____
Time of Incident:_____ Time of Report:_____
Facility Name:_____
Facility Telephone #:_____
Location of Release:_____
Facility Location:_____
Street Address:_____
City/Town:_____

B. Release Description

Type of material(s) released:_____
Estimated quantity released:_____
Were there injuries to anyone on site?:_____
Did the release impact a catch basin or storm drain?:_____
Describe the ground surface that the release occurred over:_____
_____
Did the release enter or travel along underground utilities (pipes, conduit, etc.)?:
_____
How did the release occur?_____
_____
Other details:_____
_____

Are any surface waters impacted, or in danger of being impacted?
_____
_____

C. Spill Response Program Notification Requirements

IN THE EVENT OF ANY RELEASE, NOTIFY:

PROGRAM MANAGER KATIE SERVIS 508-775-2020

SPILL RESPONSE COORDINATOR ROBERT HOLZMAN 508-778-7770

BARNSTABLE MUNICIPAL AIRPORT RESCUE AND FIREFIGHTING 508-778-7770

PREFACE – I

(continued)

IF RELEASE IS LOCATED ON WATER DEPT. PROPERTY NORTH OF 15/33, NOTIFY:

SUPT. THOMAS ROONEY 508-364-9359

D. State and Federal Notification Requirements

Does Massachusetts Department of Environmental Protection (MassDEP) Require Notification?

- **A release of ≥ 10 Gallons Gas/Diesel/Oil requires MassDEP Notification**
- **A release of an unknown quantity requires MassDEP notification**

If required, notify Massachusetts DEP at 888-304-1133*

Does the USCG/Federal National Response Center (NRC) Require Notification?

- **A discharge to navigable waters requires USCG/NRC notification**
- **A sheen on water surface is considered a harmful quantity**

If required, notify USCG/NRC at 800-424-8802*

* **record any instructions/information from MassDEP or NRC in the space provided below.**

E. Generator Information

Generator/Responsible Party: _____
Street Address: _____
City/Town: _____State:_____
Contact Person: _____Title: _____
Contact Telephone Number: _____

F. Documentation of Notification
(Record time of agency/contact notification, instructions, reporting number, etc. here)

_____
_____
_____
_____
_____
_____

PREFACE – I

(continued)

4.0 REPORTABLE CONDITIONS

In accordance with Commonwealth of Massachusetts regulations, 310 CMR 30 and 310 CMR 40.0000, a release or threat of a release of a reportable quantity of oil and or hazardous materials must be reported to the MassDEP within two hours of obtaining knowledge of the release. Under MassDEP regulations 310 CMR 40.0000 a release of oil of **10-gallons or greater** is considered reportable. Contaminants detected in the environment at or above a certain concentration require reporting to the MassDEP, are listed in 310 CMR 40.1600. Refer to Appendix E of the Airport's SPCCP for forms to be completed during a spill event.

Federal reportable quantities for releases into soil, water and air are listed in Table 302.4 of 40 CFR 302.4. Each regulatory agency has these reportable quantities posted on its website (www.state.gov/dep; and www.epa.gov).

PREFACE - II

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN APPROVAL AND CERTIFICATION

BARNSTABLE MUNICIPAL AIRPORT HYANNIS, MASSACHUSETTS

MANAGEMENT APPROVAL

This oil and hazardous substances Spill Prevention, Control, and Countermeasure Plan and attached Emergency Response Action Plan has been carefully reviewed by Barnstable Municipal Airport Management. Management concurs with and supports the programs and procedures which are to be implemented, periodically reviewed, and updated in accordance with Federal Regulation 40 CFR 112.

Signature: _____

Katie Servis
Spill Response Program Manager
Airport Manager
Barnstable Municipal Airport

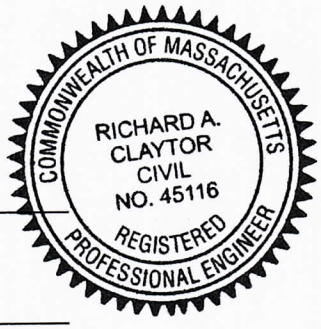
PROFESSIONAL ENGINEER CERTIFICATION

I hereby certify that I am familiar with the provisions of Federal Regulation 40 CFR 112 and attest that the Spill Prevention, Control, and Countermeasure Plan has been prepared in accordance with reasonable and prudent engineering practices, and satisfies the current requirements of the aforementioned regulation.

Name: Richard A. Claytor, Jr., P.E.

Signature: _____

Date: 4-29-2020



Registration Number: 45116

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PREFACE - III

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN
RECORD OF CHANGES

BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

This Spill Prevention, Control, and Countermeasure Plan has been prepared for the Barnstable Municipal Airport. No alteration or revision shall be made to any part of this plan except at the direction of the Spill Response Program Manager. The Program Manager shall update this plan as required, and shall ensure the timely update of all facility plans.

Date	Revision Number	Section and Pages Changed	Author of Revision	Approved By
10/06	1	Plan Update	Horsley Witten Group, Inc.	FS
7/10	2	Tenant List Update	Horsley Witten Group, Inc.	FS
12/13	3	Plan Update	Horsley Witten Group, Inc.	FS
04/20	4	Plan Update	Horsley Witten Group, Inc.	KS

PREFACE - IV

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN
REGULATORY CROSS-REFERENCE WITH 40 CFR 112

BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

Regulatory Provision	Regulatory Requirement	Location in SPCCP
112.3 (d)	Professional Engineer Certification	Preface II
112.3 (e)	Location of SPCC Plan	Section 2.0
112.5	SPCC Plan review and amendment	Section 3.0
112.7	Facility Management approval	Preface II
112.7	Cross reference with 40 CFR 112	Preface IV
112.7 (a)(1)	Discussion of Facility conformance	Section 1.0
112.7 (a)(2)	Deviation from plan requirements	Not Applicable
112.7 (a)(3)	Facility physical layout and facility	Section 7.0,
112.7 (a)(3)(i)	Oil storage containers	Sections 8.0, 9.0 Figures 2 and 3
112.7 (a)(3)(ii)	Discharge prevention measures	Section 10.0
112.7 (a)(3)(iii)	Discharge or drainage controls	Section 10.0
112.7 (a)(3)(iv)	Countermeasures for discharge discovery, response, and cleanup	Section 12.0, 14.0
112.7 (a)(3)(v)	Methods of disposal of recovered	Section 12.1.1
112.7 (a)(3)(vi)	Emergency contact list	Section 13.1,
112.7 (a)(4)	Discharge reporting	Section 13.0,
112.7 (a)(5)	Discharge response procedures	Section 12.0
112.7 (b)	Potential discharge volumes and direction	Section 8.0, 9.0,
112.7 (c)	Containment and diversionary structures	Section 8.0, 9.0,
112.7 (d)	Demonstration of impracticability of secondary	Not Applicable
112.7 (e)	Inspections, Tests, and Records	Section 15.0

PREFACE – IV

(continued)

Regulatory Provision	Regulatory Requirement	Location in SPCCP
112.7 (f)(1)	Oil handling personnel trained in operation and maintenance of facility equipment to avoid a discharge, discharge procedures, applicable laws and regulations, and contents of SPCC Plan	Section 4.0
112.7 (f)(2)	Designate personnel at each applicable facility responsible for SPCC Plan compliance	Section 2.0
112.7 (f)(3)	Discharge prevention briefings for all oil-handling personnel	Section 4.0
112.7 (g)(1)	Applicable areas fully fenced when unattended	Section 7.3
112.7 (g)(2)	Flow and drain valves secured in closed position when not in operation	Appendix B
112.7 (g)(3)	Transfer controls secured in closed position when not in operation, accessible only by authorized personnel	Appendix B
112.7 (g)(4)	Transfer systems capped when not in operation	Appendix B
112.7 (g)(5)	Adequate facility lighting to observe a discharge and prevent vandalism	Section 7.3
112.7 (h)(1)	Quick drainage systems in lieu of catchment basin	Not Applicable
112.7 (h)(2)	Warning system to prevent vehicle departure prior to complete disconnection of flexible or fixed transfer lines	Appendix B
112.7 (h)(3)	Inspection of all transfer connections on vehicle prior to transfer	Appendix B
112.7 (i)	Brittle fracture evaluation	Section 15.5
112.7 (j)	Compliance with Applicable State and Local Requirements	Section 1.0
112.8 (b)	Facility drainage	Section 7.5
112.8 (c)(1)	Bulk storage container construction	Section 8.0, 9.0

PREFACE – IV

(continued)

Regulatory Provision	Regulatory Requirement	Location in SPCCP
112.8 (c)(2)	Secondary containment	Section 8.0, 9.0, 10.0
112.8 (c)(3)	Drainage of diked areas	Section 7.5
112.8 (c)(4)	Corrosion protection	Section 8.0
112.8 (c)(5)	Partially buried and bunkered storage tanks	Not Applicable
112.8 (c)(6)	Inspection and testing of aboveground storage tanks	Section 15.0
112.8 (c)(7)	Heating coils	Not Applicable
112.8 (c)(8)	Overfill prevention devices	Section 8.0
112.8 (c)(9)	Effluent treatment facilities	Not Applicable
112.8 (c)(10)	Visible discharges	Appendix B
112.8 (c)(11)	Mobile and portable containers	Section 8.0, 9.0
112.8 (d)	Transfer operations, pumping and in-plant	Section 8.0
112.20 (e)	Certification of Substantial Harm Determination	Appendix A

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

1.0 INTRODUCTION

Code of Federal Regulations 40, Subpart 112 (40 CFR 112) provides guidance for the development of Spill Prevention, Control, and Countermeasure Plans (SPCCP) and establishes procedures and methods to prevent the discharge of oil from non-transportation-related facilities into surface waters and adjoining shorelines. Additionally, Massachusetts State regulations (310 CMR 30.521(4)) require SPCCPs, with added requirements to comply with State 310 CMR 30 Hazardous Waste regulations. The Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Regulation 40 CFR 300.3, and the Resource Conservation and Recovery Act (RCRA) Regulation 40 CFR 264.52 expand the scope of the SPCCP to incorporate hazardous materials as defined in 40 CFR 302.3.

An SPCCP must be written and certified for an installation or commercial entity when both of the following criteria are met:

1. There is a reasonable potential for discharging oil into or upon navigable waters of the United States; and
2. The oil storage capacity on-site exceeds either:
    a. 42,000-gallons of total underground storage, or
    b. 1,320-gallons of total above-ground storage, or any single container having a capacity in excess of 660-gallons.

This SPCCP has been prepared for the Barnstable Municipal Airport, 480 Barnstable Road, Hyannis, Massachusetts 02601 (the "Airport"), due to the following:

1. There is a reasonable potential for discharging oil into or upon the waters of the United States, and
2. Above-ground fuel storage capacity exceeds 1,320-gallons, with a single container having a capacity in excess of 660-gallons.

2.0 SPCCP IMPLEMENTATION

This SPCCP is to be implemented by Airport employees and tenants. The Spill Response Program Manager (Program Manager) and Spill Response Coordinator (Coordinator) are

responsible, to the greatest extent possible, for ensuring employee and tenant awareness, program participation, and operational compliance with the guidelines provided in this SPCCP. Copies of the SPCCP are to be maintained in the Barnstable Municipal Airport (Airport) Management Office within the Main Terminal, the Aircraft Rescue and Fire Fighting/Snow Removal Equipment (ARFF/SRE) Building, and with the tenants identified in Section 7.2.

Spill Response Program Manager:
Katie Servis
Airport Manager
Barnstable Municipal Airport
508-775-2020

Spill Response Coordinator:
Robert Holzman
Operations Supervisor
508-778-7770 (24-hour contact number)

Effective spill prevention and response management is best facilitated through the designation of a Response Team representative (typically an owner, manager, or supervisor) for each Airport tenant operation involving the storage, transfer, or use of oil and/or hazardous materials (OHM). Response Team representatives are responsible for personnel training and maintaining operational compliance with the guidelines established in this SPCCP and described in further detail in Section 4.0 of this plan.

3.0 SPCCP REVIEW

If there is a change in the facility design, construction, operation, or maintenance which materially affects the potential for discharge of OHM into surface waters and adjoining shorelines, this SPCCP shall be amended in accordance with 40 CFR, parts 112.5 and 112.7. Amendments shall be implemented no later than 6 months after such changes occur. The Program Manager shall review and evaluate the SPCCP every five years. The Program Manager shall amend the SPCCP within 6 months of the five-year review to include more effective prevention and control technology, if available. No amendment to this SPCCP shall be effective to satisfy these requirements unless it has been certified by a Professional Engineer in accordance with 40 CFR 112.3(d). Statements of Airport Management Approval and Professional Engineer Certification, and a SPCCP Revision Log are included as prefaces to this plan. Amendments which do not significantly alter the potential for a discharge to occur, such as name and address revisions, do not require an Engineer's certification, however, all revisions shall be recorded in the SPCCP Revision Log.

4.0 RESPONSE TEAM DESIGNATION AND PERSONNEL TRAINING

The Coordinator shall designate a Response Team representative for each Airport tenant operation that involves the transport, use, or storage of OHM. Response Team members, along with the Coordinator, will be responsible for ensuring spill awareness among Airport and tenant employees, and operational compliance with the provisions of this SPCCP.

At a minimum, OHM-handling personnel shall be trained in the operation and maintenance of related facility equipment, facility discharge procedures, applicable laws and regulations, and the contents of the SPCCP. On an annual basis, the Coordinator shall conduct Discharge Prevention briefings for all oil-handling personnel, and include discussions of the SPCCP, any discharges within the past year, or changes to the Airport that might affect the potential for a discharge.

No provisions within this SPCCP, expressed or understood, relieve any tenant from providing response training to their employees, as required by Local, State and Federal regulations. Each Response Team Member shall provide the Coordinator with 24-hour contact information for inclusion in Section 7.2, and in the Airport's Emergency Response Action Plan (ERAP), described in Section 11.0.

5.0 SPCCP LIMITATIONS

This SPCCP provides information critical to the prevention of, and response to, releases of OHM at the Airport, and includes discussions of tenant operations, storage facilities, and transfer procedures. The Airport assumes no liability or responsibility for tenant operational compliance with applicable Local, State, and Federal Regulations, including the requirements established in 40 CFR 112, and described in this SPCCP. Tenants required to prepare and implement a SPCCP shall do so independently of this SPCCP.

6.0 APPLICATION OF SUBSTANTIAL HARM CRITERIA

Appendix C of 40 CFR 112 requires a facility to determine whether or not their facility is considered a "substantial harm facility." Certification of the applicability of the substantial harm criteria for the Airport is included as Appendix A. Substantial harm facilities are required to submit a Facility Response Plan to the Environmental Protection Agency's (EPA) Regional Administrator. The Airport is not considered a "substantial harm" facility and as such is not required to submit a Facility Response Plan to the EPA Regional Administrator.

7.0 FACILITY INFORMATION

7.1 Facility Description and Operations

The Airport provides commercial airline service and general aviation services to Boston, Cape Cod and the Islands of Martha's Vineyard, and Nantucket. The Airport began operations in 1928 and is the third largest and busiest airport in the Commonwealth of Massachusetts.

The Airport property consists of approximately 645 acres, approximately 142 are paved for use as taxiways, runways, and parking aprons. The Airport is bordered to the south by Barnstable Road (Route 132), to the west by Yarmouth Road, to the north by Route 6, and to the east by an industrial park (Independence Park). A locus map is included as Figure 1 and an aerial photograph identifying OHM storage locations at the Airport is included as Figure 2. Structures on Airport property include the Main Terminal and Air Traffic Control Tower (ATCT), several service and storage hangars, tenant facilities, and the Airport Rescue and Fire Fighting/Snow Removal Equipment Building (Airport ARFF/SRE). Airport property and structures located along runways 6 and 15 are commonly referred to as the East and North Ramps, respectively. A site plan detailing the structural layout of the Airport including stormwater drainage patterns and locations is included as Figure 3.

More than 40 tenant businesses operate on Airport property, providing industry-related services. Normal tenant operations include the maintenance and servicing of aircraft and associated aviation equipment, aviation fuel transfer, and general facility maintenance. Operations related to aircraft maintenance include engine maintenance, electronics repair, hydraulic system repair, aircraft washing, body repair, aircraft de-icing, and wheel and tire maintenance and repair. Ground vehicle operations and maintenance includes fluid changes, filter changes, refueling, brake repair, interior and exterior reupholstering, body repair, minor painting, and washing.

Airport Operations and Maintenance responsibilities include fuel transfer, traffic control, airport security, equipment operation and maintenance, facility maintenance and grounds-keeping. OHM use and storage at the Airport includes aviation fuel, gasoline, diesel, lubrication oil, motor oil, waste oil, deicing solutions, anti-freeze, paints, industrial chemicals and adhesives, compressed gases, solvents, and cleaning solutions.

Facilities maintenance operations include structural maintenance and repairs, airfield lighting and marking maintenance, painting, mowing, snow removal, and utility maintenance.

7.2 Tenant and Airport Operations Information

Current Airport Operations and tenant contact information are presented below.

Robert Holzman
Airport Operations Supervisor
480 Barnstable Road - 2nd Floor
Hyannis, MA 02601
508-778-7770

Helyne Medeiros
Rectrix Aerodrome Center, Inc.
Box 13 - 730 Barnstable Road
Hyannis, MA 02601
508-771-7520

Hildie Rios
Aviation Fuel Coordinator
480 Barnstable Road
Hyannis, MA 02601
508-778-7770

John Cahill
Hertz Car Wash
480 Barnstable Road
Hyannis, MA 02601
508-775-5825

Brad Everson
Airport Rescue Fire Fighting Coordinator
480 Barnstable Road - 2nd Floor
Hyannis, MA 02601
508-778-7770

Jody Lewis
Allies Air
550 Barnstable Road
Hyannis, MA 02601
508-364-5786

Robert Griffin
Griffin Avionics
630 Barnstable Road
Hyannis, MA 02601
508-771-2638

Peter Farrell
Cape Air / Nantucket Airlines
660 Barnstable Road
Hyannis, MA 02601
508-790-3122

Peter Greaves
AMA Nantucket Inc.
130 Mary Dunn Way
Hyannis, MA 02601
508-771-8273

Cape Flight Instruction
Edmund Cottle
150 Mary Dunn Way
Hyannis, MA 02601
508-274-2424

7.3 Facility Security

The Airport is manned on a 24-hour basis. Airport security is maintained through several means. Access to Airport property is restricted by a perimeter fence which is inspected daily. Unsupervised entry within the perimeter fence is limited to approved personnel who carry Airport-assigned identification. Facility security staffing includes personnel from Airport Security, the Hyannis Police Department, and the Transportation Security Administration (TSA). All fuel transfer and storage areas are located within the

main perimeter fence and access to these areas is therefore restricted to approved personnel. The Airport's Gate F Fuel Farm facility is also surrounded by an additional security fence and can only be accessed by approved personnel. The fuel transfer facility, Gate F Fuel Farm, and overnight staging areas for mobile refuelers are equipped with adequate lighting to aid in the observation of a release and deter any acts of vandalism.

7.4 Wastewater Management

With the exception of the ARFF/SRE building (Figure 3), all tenant facilities located on the East Ramp currently discharge sanitary wastewater to on-site septic systems. The ARFF/SRE building, South Ramp Deicing Pad and all structures located on the North Ramp of the Airport, including the Main Terminal, ATCT, and all other tenant facilities (Figure 3) discharge wastewater including sanitary waste to the Barnstable Wastewater Treatment Facility. Oil/water separators (O/WS) are located at the ARFF/SRE building, South Ramp Deicing Pad, Griffin Avionics, and Cape Air/Nantucket Air hangar and provide pre-treatment of floor drain discharge from each facility prior to discharge to the Barnstable Wastewater Treatment Facility. The Avis and Hertz Car Wash, located south of Barnstable Road on Airport property, also utilize O/WS to pre-treat vehicle wash-water that is subsequently discharged to the Barnstable Wastewater Treatment Facility. The locations of these tenants are included on Figure 3.

7.5 Stormwater Management

Stormwater management at the Airport is provided through several systems. The majority of paved surfaces within the perimeter fence, including all runways, discharge stormwater to a system that transports stormwater to one of two surface water bodies located on Airport property, Upper Gate and Lewis ponds (Figure 3). A number of catch basins are not connected to the main drainage system, and infiltrate stormwater at their respective locations or discharge stormwater to infiltration basins. A site plan, identifying Airport drainage areas, stormwater conveyances, surface water outfalls, and retention basins is included as Figure 3. O/WS used to pre-treat stormwater are located at the Gate F Fuel Farm and prior to Outfall A. Vortech® water quality units located prior to each of the outfalls discharging to Upper Gate and Lewis ponds provide pretreatment to all stormwater discharged to the ponds. Calculated total suspended solid (TSS) removal rates for the water quality units range from 81% to 87%. Since the installation of the Vortech® units in 2011, 100% of stormwater discharged to the ponds receives pretreatment.

7.6 Spill History

Facilities having experienced one or more spills within a year of the effective date of the SPCCP are required to describe each spill, any corrective actions taken, and plans for preventing recurrence. Two spills have occurred at the Airport in 2019, as described below. No other spills have occurred at the Airport within the past five years of the effective date of this plan (April 2020).

- In November 2019, a release of 51 gallons of Jet A fuel occurred at the Gate F Fuel Farm from a hand operated pump located within the concrete secondary containment structure (Figure 2). The hand pump was not fully closed after the previous use and was the source of the release. Due to a storm drainage valve being opened, the release drained from the secondary containment structure into an O/WS. Airport personnel responded to the spill and applied absorbents. Airport personnel notified the fire department and the MassDEP within two hours of identifying the release. Clean Harbors and a Licensed Site Professional responded to the release and pumped out and cleaned the O/WS, recovered absorbents, and cleaned the interior of the concrete secondary structure with a citrus based degreaser. The release was contained by the concrete secondary containment and the OW/S and there was no discharge of pollutants to stormwater and/or surface waters. Due to this incident, a new procedure was implemented by the Airport on November 26, 2019 for the operation of the hand pump and storm water drain value at the fuel farm. The new procedure is as follows:

<u>Hand Pump Operation</u>

- Prior to hand pump usage by Airport staff, verify that the stormwater drain valve located adjacent to the secondary containment structure is in the closed position.
- Operate hand pump as necessary to obtain fuel sample.
- After sample collection, verify hand pump is in the closed position.

<u>Stormwater Drain Valve Operation</u>

- Inspect the concrete secondary containment pad and both interior drainage sumps for visual and olfactory evidence of OHM. Collect a representative sample of accumulated rainwater in a clear container and record the observations on the inspection form. If no visual or olfactory indication of OHM is observed, the accumulated rainwater within the secondary containment is assumed to be free of OHM.
- Next, open the first manhole cover (marked “DRAIN”) in front of the Gate F Fuel Farm located between the storm water valve and the fuel farm. Cones

or other means to mark the open hole must be utilized. Collect a representative sample of accumulated rainwater from within the manhole in a clear container and record the observations on the inspection form. If no visual or olfactory indication of OHM is observed, the accumulated rainwater within the drain manhole is assumed to be free of OHM. The adjacent drain valve should then be opened, and the Airport staff member will monitor the draining of the open manhole and secondary containment as the water moves into the adjacent O/WS prior to discharging into the stormwater system.

  - Once the draining of the open manhole and secondary containment is completed, the drain valve is to be closed. Additionally, the manhole is to be closed.

- On December 21, 2019 a release of one to two gallons of jet fuel occurred at the Rectrix Aerodrome Center Hanger while refueling a Hawker 827TX aircraft (Figure 2). The release occurred to the asphalt paved ground surface from venting of the right wing. Rectrix personnel responded to the spill immediately by placing granular absorbents and using pads to mop up the spilled jet fuel and notified the Airport. The absorbent and pads were placed into a 55-gallon drum for future off-site disposal. The release was contained to the asphalt pavement and there was no discharge of pollutants to stormwater and/or surface waters. Considering the nature of the release, no change to the fueling procedures or release response is necessary.

8.0 STORAGE AND TRANSFER OF FUEL

Significant volumes of virgin petroleum are stored at several locations at the Airport within storage tanks. Details concerning virgin petroleum storage are provided in Table 1 and Table 2, and locations are set forth on Figures 2. The Airport is also subject to the requirements in Federal Aviation Administration (FAA) Advisory Circular 150/5230-4, Aircraft Fuel Storage, Handling, and Dispensing on Airports.

Table 1. Barnstable Municipal Airport Virgin Petroleum Storage

Operator	Location	Product	Tank Type	Spill Protection	Volume (Gallons)
Rectrix / Air Cape Cod	Gate P Fuel Farm	Avgas[3]	AST[1]	Overfill protection, double walled tanks, interstitial monitoring	10,000
		Jet A			10,000
Griffin Avionics	Griffin Fuel Island	Avgas[3]	UST[2]	Overflow protection, leak detection, double walled piping with sumps/sensors, and line leak detection	(2) 10,000
Cape Air	Inside Cape Air Hangar	Avgas[3]	Portable AST[1]	Spill Containment Pallet	100

Operator	Location	Product	Tank Type	Spill Protection	Volume (Gallons)
Hertz Car Rental	Barnstable Road – Service Lot	Unleaded Gasoline	UST	Double walled, In tank monitor	10,000
Barnstable Municipal Airport	Gate F Fuel Farm	Unleaded Gasoline	AST	Overfill protection, concrete secondary containment, interstitial monitoring	4,000
		Diesel	AST		4,000
		Jet A	AST	Overfill protection, concrete secondary containment pad, double walled tanks, interstitial monitoring	(3) 20,000

Notes:

[1] Aboveground Storage Tank

[2] Underground Storage Tank

[3] Aviation Gas

Virgin petroleum products are transported by Airport and tenant mobile refuelers for the purpose of refueling aircraft. Fuel delivery and transfer procedures are described in greater detail in Sections 8.1 and 8.2. Specific characteristics of each mobile refueler are provided in Table 2, below.

Table 2. Barnstable Municipal Airport Mobile Refuelers

Operator	Product	Spill Prevention Equipment	Truck Designation	Storage Capacity (Gallons)
Barnstable Municipal Airport	Jet A	All mobile refuelers are equipped with absorbents, drip pans, magnetic catch basin covers, and oil booms to respond to the most likely quantity of oil that could be discharged (<10 gallons) during refueling activities	5249	5,000
			5250	5,000
			5251	3,000
Rectrix / Air Cape Cod	Avgas		44219	1,500
Rectrix Aerodrome	Jet A		5693	3,000
Cape Air	Avgas		4298	1,500
Griffin Avionics	Avgas		612	620
			4134	1,200

8.1 Fuel Delivery

Detailed fuel delivery procedures for the Airport are included as Appendix C and are described in general below.

8.1.1 Jet A Fuel

Jet A fuel is currently stored at the Airport's Gate F Fuel Farm in three 20,000-gallon ASTs, and at Rectrix / Air Cape Cod's Gate P Fuel Farm in a 10,000-gallon AST. Details concerning spill protection are included above in Table 1. Vendor delivery of Jet A fuel at the Gate F Fuel Farm is coordinated and supervised by Airport personnel; fuel delivery at the Gate P Fuel Farm is coordinated and supervised by Rectrix / Air Cape Cod personnel. Flexible transfer lines, used for connecting fuel delivery trucks to the above-ground transfer manifolds at both locations, are inspected prior to each fuel transfer, and are replaced as necessary. Fuel deliveries are generally made during daylight hours; however, after-hours deliveries are conducted when necessary. Direct communication between the refueling agent and Airport personnel is maintained throughout the transfer. Prior to delivery, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the vendor fuel delivery truck and personnel shall ensure that spill response resources to clean up or contain a small spill are readily available.

Airport and Rectrix / Air Cape Cod personnel are responsible for the assessment of Jet A fuel quality at the time of delivery and for the inspection of all fuel transfer and containment equipment.

8.1.2 Aviation Gas

Aviation Gas (Avgas) is currently stored in two 10,000-gallon USTs located at Griffin Avionics and at Rectrix / Air Cape Cod's Gate P Fuel Farm in a 10,000-gallon AST. Details concerning spill protection are included above in Table 1. Avgas deliveries are made by several vendors for each receiving facility and are completed during normal business hours. Flexible transfer lines, used for connecting fuel delivery trucks to the transfer manifolds, are inspected prior to each fuel transfer, and are replaced as necessary. Direct communication between the delivery truck operator and tenant personnel is maintained throughout the transfer. Prior to delivery, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the vendor fuel delivery truck and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

In accordance with Federal Regulations 14 CFR 139, tenant operations involving the storage or transfer of Avgas must maintain personnel training programs. One supervisor from each refueling tenant must complete an aviation fuel training course at an approved FAA-sponsored fueling course. Following this training, supervisors shall train all other employees involved in storing, dispensing and handling fuel in fire safety. Records of employee training are maintained by the Airport Operations. Records of system checks and transfer equipment inspections are maintained by each tenant.

8.1.3 Unleaded Gasoline

Unleaded gasoline is currently stored in a 10,000-gallon UST located at Hertz Car Rental located at the Barnstable Road Service Lot and at the Gate F Fuel Farm in a 4,000-gallon AST. Details concerning spill protection are included above in Table 1. Direct connections between the delivery truck and the storage tank are accomplished through flexible transfer lines, which are inspected prior to each fuel transfer. Fuel flow during transfer is controlled by the delivery truck operator and incorporates a dead man switch. Delivery of unleaded gasoline to the Gate F Fuel Farm is supervised by Airport personnel. Prior to delivery, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the vendor fuel delivery truck and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

8.1.4 Diesel Fuel

Diesel fuel is currently stored at the Gate F Fuel Farm in a 4,000-gallon AST. Details concerning spill protection are included above in Table 1. Diesel fuel at the Gate F Fuel farm is used for the refueling of Airport service vehicles. Direct connections between the delivery truck and storage tank are accomplished through a flexible transfer line, which is inspected prior to each fuel transfer. Fuel flow during transfer is controlled by the tank truck operator and incorporates a dead man switch. Delivery of diesel is supervised by Airport personnel. Prior to delivery, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the vendor fuel delivery truck and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

8.2 Mobile Refueler Operations

Transfer of fuel between mobile refueling trucks and aircraft occurs regularly at the Airport and is described in further detail below. Standard procedures for the transfer of fuel to mobile refuelers operated by the Airport are included as Appendix C. Details concerning spill protection are included above in Table 2.

During normal hours of operation, tenant-operated refuelers are staged at each respective tenant's apron terminal, where aircraft refueling typically occurs. The Airport's Jet A mobile refuelers are staged along the paved access way behind the Airport Operations building on the East Ramp. Prior to fuel transfer or during extended vehicle parking, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the Mobile Refueler. Drip pans are also placed under the fuel rack and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

40 CFR 112.7(c) and 112.8(c) require all mobile or portable fuel containers to be designed, positioned, and operated within a means of containment allowing for any discharge to be contained. Rule change EPA-HQ-OPA-2005-0001; FRL-8007-2 relieves airport refuelers from the "sized" secondary containment requirements established in 40 CFR 112.8(c)(2) and (11). All refueling of aircraft occurs over impervious surfaces, allowing for any discharge to be properly contained using the spill response resources maintained on each refueler, at each fuel storage location, and in the spill response trailer at the Airport Operations building. An O/WS, described in further detail in Section 10.2, provides secondary containment for the paved apron area at the Gate F Fuel Farm. All transfers of fuel at the Gate F Fuel Farm occur over this paved apron area, including delivery and transfer to mobile refuelers.

8.2.1 Transfer of Jet A to Mobile Refuelers

The Airport and Rectrix currently operate Jet A mobile refuelers. Jet A is transferred to the Airport's mobile refuelers at the Gate F Fuel Farm, and to the Rectrix mobile refueler at the Gate P Fuel Farm. Details concerning spill protection are included above in Table 2. Airport personnel conduct daily inspections of all associated transfer equipment, including transfer hoses, flow control devices, and spill prevention devices, as required by 139 CFR 327. Annual tank testing and maintenance are completed by outside contractors. Records of daily and annual inspections are maintained by the Airport and tenant Fueling Agents. A mobile refueler daily inspection sheet utilized by Airport Operations personnel is included as Appendix D.

Loading of Jet A refuelers is accomplished through the use of flexible transfer lines. Fuel flow is controlled by a dead man switch, held by the operator. Airport and Rectrix personnel are responsible for the proper function and alignment of all fuel transfer equipment during transfer of Jet A to mobile refuelers. Prior to transfer, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the transfer vehicle and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

8.2.2 Transfer of Avgas to Tenant Mobile Refuelers

Fuel transfer of Avgas to tenant mobile refuelers occurs at both Rectrix / Air Cape Cod's AST and Griffin Avionic's USTs. Details concerning spill protection are included above in Table 2. Griffin and Cape Air refuel their refuelers at the Griffin fuel transfer station. Rectrix is the only tenant that utilizes the Avgas AST located at the Gate P Fuel Farm. All fuel transfers occur over well-lit, impervious surfaces, allowing for the observation and containment of any discharges. Transfer of fuel is performed using flexible transfer lines. Fuel flow to the refueler is controlled by a dead man switch, held by the refueler operator. Prior to transfer, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the transfer vehicle and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

8.2.3 Transfer of Jet A to Aircraft

Jet A Fuel is transferred to aircraft on non-movement taxiway apron areas and aircraft parking areas by Airport Operations and Rectrix mobile refuelers. Details concerning spill protection are included above in Table 2. Airport Operations personnel conduct all transfer of Jet A fuel to aircraft other than Rectrix. Prior to transfer, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the transfer vehicle and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

8.2.4 Transfer of Avgas to Aircraft

Griffin, Cape Air, and Rectrix personnel transfer Avgas to aircraft on non-movement apron areas and aircraft parking areas. Details concerning spill protection are included above in Table 2. Only trained tenant personnel, as described in Sections 4.0 and 8.1.2, are authorized to dispense Avgas fuel to aircraft. Prior to transfer, magnetic storm drain covers are temporarily placed on all catch basins within proximity of the vehicle prior to fuel transfer. Drip pans are also placed under the fuel rack on the transfer vehicle and personnel ensure that spill response resources to clean up or contain a small spill are readily available.

9.0 STORAGE OF OTHER OHM

Other OHM is stored at several locations at the Airport within containers ranging in size from less than 5-gallons to 500-gallons. Details concerning 55-gallon and larger containers of other OHM (non-fueling related products) are provided in Table 3, and OHM storage locations are included on Figure 2.

Table 3. Other Airport OHM Storage Locations

Operator	Location	Product	Storage Vessel Type	Spill Protection	Volume (Gallons)
Barnstable Municipal Airport	Outside Airport ARFF/SRE Building	Waste Oil / Anti-freeze	AST	Leak detection, double walled with reinforced concrete	350/150
	Inside Airport ARFF/SRE Building	Anti-freeze	Drums	Spill Containment Pallet	55
		Diesel Exhaust Fluid			
		15W40			
		Grease			
		Hydraulic Oil			
		ATF			
		5W30 SYN			
		Waste Oil			
Rectrix / Air Cape Cod	Gate P Fuel Farm	Waste Absorbent	Drums	Spill Containment Pallet with overhead cover	55
		Waste Jet A Fuel			
		Avgas			
Rectrix Aerodrome	Inside Rectrix Hangar	Jet A	AST	Double walled	55
		Reclaimable Jet A Fuel	Drums	Spill Containment Workstation with lid	55
		Waste Oil			
		Waste Absorbent			
Griffin Avionics	Inside Griffin Hangar	Used Oil filters	Drums	Spill Containment Pallet	55
		Waste Oil			
		Avgas			
Cape Air	Inside Cape Air Hangar	Waste Oil	AST	Overflow detection, double walled	500
		Waste Oil	Drums	Spill Containment Pallet	55
		Hydraulic Oil			
		Used Oil Filters			
		Anti-freeze			
Allies Air	Inside Allies Air Hangar	Waste Oil	Drums	Spill Containment Pallet	55
AMA Nantucket Inc.	Inside AMA Nantucket Inc. Hangar	Waste Oil	Drums	Spill Containment Pallet	55
		Mineral Spirits			
Cape Flight Instruction	Inside Cape Flight Instruction Hangar	Waste Oil	Drums	Spill Containment Pallet	55
		Anti-freeze			
		Used Oil Filters			
Avis Car Wash	Barnstable Road – Service Lot	Car Washer Fluid	AST	O/WS	250
Hertz Car Wash	Barnstable Road – Service Lot	Car Washer Fluid	AST	O/WS	250

Note: The total number of drums of OHM located in tenant facilities may vary. Proper secondary containment must always be provided for all drums of OHM and petroleum storage ASTs.

9.1 OHM Usage in Portable Containers

OHM including lubricants, cleaners, car washer fluid and anti-freeze is dispensed into small containers from hand dispensers connected to larger containers. The larger containers are located within the interior of the ARFF/SRE building, tenant hangars, Hertz Car Wash, and Avis Car Wash. Any floor drains located within the buildings are connected to O/WS and discharge to the municipal sewer system. Details on spill protection is included above in Table 3.

9.2 OHM Stored in Portable Containers for Disposal

OHM including waste lubricants, cleaners, and anti-freeze is placed into 55-gallon drums for future off-site disposal. The 55-gallon drums are located within the interior of the ARFF/SRE building and tenant hangars and are located within secondary containment. Floor drains located within the buildings are connected to O/WS and discharge to the municipal sewer system. It is estimated that at any given time the Airport and tenants could have approximately 50 to 75 55-gallon drums of various OHM stored within buildings. Details on spill protection is included above in Table 3.

10.0 SPILL PREVENTION AND POTENTIAL SPILL PATHWAYS

Where experience indicates a reasonable potential for the release of oil to the environment, 40 CFR 112.7(b) requires that a SPCCP predict a flow pathway for any released material. Sanitary waste is the only material discharged to septic systems. Floor drains located within buildings are connected to O/WS and/or the municipal sewer system. Potential discharge pathways for each fuel storage and transfer area and OHM container storage area are predicted below.

10.1 Rectrix / Air Cape Cod Fuel Farm

The Rectrix/Air Cape Cod Fuel Farm is located in Drainage Area K as indicated on Figure 3. Standard operating procedures for the delivery and dispensing of Avgas from Rectrix/ Air Cape Cod Gate P Fuel Farm should limit the likelihood of a release during fuel transfer. Vehicle traffic at the AST locations and associated transfer areas is restricted. The fuel farm is equipped with an emergency shut-off. Rectrix/Air Cape Cod maintain fire-fighting spill response resources at the fuel farm as well as on-board their mobile refueler. The fuel farm is also equipped with appropriate fire extinguishers.

In the event of primary containment failure in the ASTs at the Rectrix / Air Cape Cod Gate P Fuel Farm, Avgas would be contained within the secondary containment wall, and personnel would be alerted. In the event of secondary containment failure, or a discharge during transfer to or from the AST, Avgas would be released to the

environment. Release migration would most likely occur in a northwesterly direction over the paved apron surface, toward a stormwater catch basin which ultimately discharges into Lewis Pond. Rectrix personnel have been directed to quickly install a magnetic catch basin cover and take preliminary response actions to minimize release migration.

10.2 Gate F Fuel Farm

The Gate F Fuel Farm is located in Drainage Area C as indicated on Figure 3. The Gate F Fuel Farm was improved in 2016 by removal of the USTs and installation of three new 20,000-gallon ASTs containing Jet A aviation fuel. A 4,000-gallon diesel and a 4,000-gallon unleaded gasoline AST are also located in this area. The new fuel farm improvements include secondary containment and leak detection monitoring as well as a 110% secondary containment concrete pad, a shut off valve, and a new O/WS that connects to the existing storm drain system in the vicinity of the three 20,000-gallon ASTs.

The 4,000-gallon diesel AST and 4,000-gallon unleaded gasoline AST are located adjacent to the secondary containment pad associated with the 20,000-gallon ASTs. Both tanks are located within secondary containment and have overfill prevention devices. Fixed fuel transfer lines are wrapped in secondary containment fiberglass housings. The paved vehicle staging area adjacent to the ASTs features an O/WS and oil level alarm. The transfer area is well-lit to aid in the observation of a release. Additional details concerning spill protection are included above in Table 1.

In the event of a release of Jet A fuel during fuel transfer, release migration would occur over the concrete containment pad and into a concrete sump. The sump features petroleum detection technology which includes audible and visual alarms to signal the presence of oil in the structure. A discharge of fuel to the paved surface at the Gate F Fuel Farm will collect in an O/WS and can be removed by a cleanup contractor for proper disposal.

In the event of failure of the unleaded gasoline/diesel AST or pump station, released fuel would migrate over paved surfaces into an O/WS. The O/WS features a high oil level audible and visual alarms to signal the presence of petroleum within the structure. A discharge of fuel to the paved surface at the Gate F Fuel Farm will collect in the O/WS and can be removed by a cleanup contractor for proper disposal.

ARFF/OPS personnel conduct FAA required testing of the fuel from the Gate F Jet A ASTs and the Airport's mobile refuelers on a daily basis, generating approximately 5 gallons of sample fuel per day. Sample fuel is returned to the tank via a recycling system located within the fuel farm.

10.3 Barnstable Municipal Airport – Airport ARFF/SRE Building

The ARFF/SRE Building is located in Drainage Area M. A double walled split AST is located outside, adjacent to the Airport ARFF/SRE Building. The AST contains 350-gallons of waste oil and 150-gallons of anti-freeze. The AST includes a primary steel tank and secondary containment with reinforced concrete and leak detection.

In the event of primary containment failure in the AST, waste oil and/or anti-freeze would be contained within the secondary containment wall, and personnel would be alerted. In the event of secondary containment failure, or a discharge during transfer to or from the AST, waste oil and/or anti-freeze would be released to the environment. Release migration would most likely occur in an eastern direction over the paved apron surface, toward a grass area with a with a leaching catch basin with an underground discharge chamber. ARFF/OPS personnel have been directed to quickly install a magnetic catch basin cover and take preliminary response actions to minimize release migration.

10.4 Barnstable Municipal Airport - Emergency Generators

All emergency generators at the Airport have been converted to natural gas.

10.5 Griffin Avionics

Griffin Avionics is located within Drainage Area F. Standard operating procedures for the delivery and dispensing of Avgas from the Griffin Avionics USTs should prevent a release during fuel transfer. Additionally, overfill prevention in each tank's transfer manifold prevents the transfer of Avgas above the tank's capacity. Griffin maintains fire extinguishers and spill response resources at the fuel transfer station as well as on-board their mobile fuel trucks.

In the event of a release during fuel delivery, or fuel transfer to mobile refuelers, fuel released to the paved surface would migrate toward and could potentially enter leaching catch basins and/or the Airport's stormwater system which ultimately discharges to Upper Gate Pond. In the event of primary containment failure in the Griffin USTs, Avgas would be released to the soils and fill material around and below the UST.

10.6 Refueling of Aircraft

Standard operating procedures for aircraft refueling reduce the potential for a discharge. Refueling of aircraft occurs on taxiway apron areas on both the North and East Ramps. There are no spill prevention systems associated with the refueling of aircraft. A release during refueling would result in a release to the paved apron surface, where the discharge could be contained using available spill response resources. Airport and tenant mobile refuelers are required to be equipped with spill response kits as described in Table 2, above. Additionally, impacts to the Airport's stormwater drainage system are minimized by the placement of magnetic mats over storm drain inlets prior to refueling operations.

10.7 Hertz Car Wash

Unleaded gasoline is stored and transferred at the Hertz Car Wash, located directly across Barnstable Road from the Airport. In the event of primary containment failure in the Hertz UST, released fuel would be contained within the secondary containment wall. In the event of secondary containment failure, fuel would be released to the soils and fill material around and under the UST.

In the event of a release during fuel transfer at the Hertz service station, spilled fuel could potentially migrate over paved surfaces and enter infiltrating catch basins located in the service station lots.

11.0 EMERGENCY RESPONSE ACTION PLAN

An Emergency Response Action Plan (ERAP) is intended to provide easy access to instructions for Airport Response Team personnel in the event of a release. An ERAP will remain attached as a preface to this SPCCP and be distributed to Response Team members at the discretion of the Program Manager. The ERAP will be kept on file and updated as described in Section 3.0 of this SPCCP.

The ERAP shall contain the following information, and shall be constructed to facilitate and expedite response to a release of threat of release of OHM:

1. Facility name, address, and general location;
2. 24-hour contact information for each Response Team Member;
3. 24-hour contact information for the Spill Response Program Manager and Coordinator;
4. Local, State, and Federal Emergency Response contact information;
5. Recommended guidelines for spill abatement, response, etc.;
6. Location of spill response materials/equipment;

7. A site map that includes the following (Figure 2 and 3):
    a. floor-drain, manhole, sewer grate locations, etc.
    b. location of oil and hazardous materials bulk storage areas
8. Additional Response Resources Contact Information (e.g., LSP, outside spill cleanup contractor); and
9. Forms to aid in proper documentation and reporting of a release.

A copy of the ERP is included as Preface I.

12.0 SPILL RESPONSE PROCEDURES

In the event of a release, or threat of release of OHM to the environment, personnel shall implement response actions to contain the release. The Spill Response Coordinator or Program Manager shall be notified as soon as possible. The following response actions should be followed for most releases.

Note: Any personnel undertaking any response activity is responsible for ensuring that appropriate, properly fitted, personnel protective equipment (PPE) is worn at all times.

12.1 General Response Procedures for Airport and Tenant Employees

Note: Only properly trained Airport and Tenant employees shall respond to a release of oil or hazardous materials.

1. Initiate evacuation, if necessary;
2. Notify Spill Response Coordinator or Program Manager, listed in Section 2.0;
3. Stop spill flow when possible without risk of personal injury to self or others;
4. Immediately deploy any readily available response resources (e.g., absorbent pads, drain covers, granulated absorbent, etc.);
5. Make the release area off limits to unauthorized personnel;
6. Restrict all sources of ignition when flammable substances are involved;
7. Continue response actions at the direction of the Spill Response Coordinator or Program Manager; and
8. Ensure that all contaminated response resources and PPE are properly containerized and labeled for disposal by a licensed hazardous waste handler.

The sequence of the initial response action may be altered depending upon the spill characteristics (i.e., type of material, quantity). The following section describes Spill Response Coordinator and Program Manager responsibilities during response actions.

12.1.1 Spill Response Coordinator

Note: If the Program Manager is unavailable, the Coordinator is authorized to activate emergency response contractors, and initiate any regulatory reporting procedures.

1. Evacuate any non-essential personnel, if necessary;
2. Eliminate the source of the release, if not already accomplished, without jeopardizing the health and safety of self or others;
3. Report the release to the appropriate local contacts (Airport Fire Department, Hyannis Fire Department, Emergency Response Contractors, LSP). When notifying any outside agency of a release of oil or hazardous material the following information, at minimum, should be provided:
    a. Name of individual reporting spill;
    b. Release location and Contact information;
    c. Substance released, estimated amount;
    d. Date and Time of release;
    e. Description of response actions, undertaken and planned;
    f. Other agencies notified or to be notified; and,
    g. Any other relevant information.
4. Direct the deployment of response resources and ensure their proper use;
5. Minimize the potential for environmental impact;
6. Notify LSP and emergency response contractors (Section 13.1) if necessary;
7. Notify the Program Manager and inform them of the release. Determine if release requires MassDEP or Federal notification, as described in Section 13.0;
8. Ensure that all contaminated response resources and PPE are properly containerized and labeled for disposal in accordance with applicable local, state and federal regulations by a licensed hazardous waste handler; and
9. Properly document all response activities; including generator information, response personnel, emergency contractor information, and any related correspondence.

12.1.2 Spill Response Program Manager

1. Determine if the release requires notification, as described in Section 13.0;

2. Ensure proper notification of authorities and/or outside response contractors (Sections 13.0 and 13.1);
3. Ensure proper documentation of release and response activities; a Spill Reporting Form is included as Appendix E;
4. Retain Hazardous Waste Manifests or Bills of Lading from licensed hazardous waste handlers; and,
5. Take additional measures, as necessary, to minimize potential for subsequent environmental impact (e.g., install absorbent boom at stormwater outfalls to capture stormwater-transported contaminants).

13.0 NOTIFICATION REQUIREMENTS

In response to a release of oil or hazardous materials, responsible parties are required to conduct response activities in accordance with Massachusetts General Laws, Chapter 21E, 40 CFR 112, and the Massachusetts Contingency Plan (310 CMR 40.0000). Notification of Local, State, or Federal agencies may be necessary. All releases, regardless of size or material, shall be reported to the Spill Response Coordinator or Program Manager. Similarly, any release that occurs due to tenant operations on Airport property must be reported to the Spill Response Coordinator or Program Manager.

The Spill Response Coordinator or Program Manager shall establish whether a harmful quantity has been released, and if the release requires notification of outside agencies. Federal regulations generally define an oil spill of harmful quantity as "….such quantities of oil determined to be harmful to the public health or welfare…..to include discharges which exceed applicable water quality standards…….or cause a film or sheen on the surface of the water, or cause a sludge or emulsion to be deposited beneath the water surface". These regulations are applicable to all navigable waters of the United States, Upper Gate and Lewis ponds are both considered navigable waters.

Massachusetts regulations 310 CMR 40.0000 define a release of 10 gallons or greater of oil or gasoline as a reportable quantity and notification to the MassDEP is required within two hours of obtaining knowledge of the release. Contaminants detected in the environment at or above threshold concentrations also require reporting to the MassDEP and are listed in 310 CMR 40.1600. Additionally, a release of oil or hazardous materials to a stormwater conveyance (e.g., leaching catch basins, culverts) requires MassDEP notification, regardless of the volume of OHM.

In the event of a single discharge of more than 1,000 gallons into or upon the navigable waters of the U.S. or adjoining shorelines, or two discharges greater than 42 gallons

within any 12 month period, the SPCCP shall be submitted to the EPA Region 1 Regional Administrator and the MassDEP for review.

13.1 Reporting to State and Federal Agencies

In accordance with Massachusetts Regulations 310 CMR 30.0000 and 310 CMR 40.0000, certain releases or threats of releases of a reportable quantity of oil and or hazardous materials must be reported to the MassDEP within two hours (www.state.ma.gov/dep). Federal reportable quantities for releases into soil, water and air are listed in Table 302.4 of 40 CFR 302.4. Each regulatory agency has these reportable quantities posted on its website.

If a harmful or reportable quantity, as defined by state and/or federal regulations, has been discharged, the spill should be reported to the following agencies:

National Response Center
24 Hour: 800-424-8802

Massachusetts Department of Environmental Protection Emergency Response Center
24-Hour Call Center: 888-304-1133

Massachusetts State Police / Hyannis Fire Department
911

Airport Rescue and Firefighting
508-778-7770

Barnstable Fire District Water Department

(To report a spill on Water Dept. property located north of 15/33)
Office: 508-362-6498

Supt. Thomas Rooney (24-Hour): 508-364-9359

The following information must be provided to State and Federal agencies when a spill is reported. All correspondence with Local, State, or Federal agencies should be recorded on a Spill Reporting Form, included as Appendix E.

1. Name, location and type of facility;
2. Person in charge of facility and phone number;
3. Name and phone number of person reporting;
4. Type and estimated amount of material;

5. Location of spill;
6. Time and date of incident;
7. Impacted waterways;
8. Whether or not storm drains have been impacted;
9. Cause of incident and equipment involved;
10. Injuries and/or property damage;
11. Duration of discharge;
12. Response Actions taken; and,
13. Agencies notified.

In the event of a large or complex release of oil or hazardous materials, the Airport will rely upon outside cleanup contractors to conduct cleanup activities. Spill containment and cleanup contractors and regulatory consultants are listed below.

Spill Containment and Cleanup:

Clean Harbors	800-645-8256
Moran Environmental Recovery	888-233-5338
Global Remediation	508-828-1005

Licensed Site Professional:

Horsley Witten Group, Inc.	508-833-6600
Bryan Massa, LSP 24-Hour Contact Number:	781-243-1527
Mark Nelson, LSP 24-Hour Contact Number:	508-566-0912

14.0 SPILL RESPONSE RESOURCES

A rapid spill response trailer is maintained at the ARFF/SRE Building. A complete inventory of the trailer's contents is included as Appendix F. Inventories are conducted regularly, and out-of-date equipment is replaced. A smaller spill kit is also maintained on each of the Airport's Mobile Refuelers, at the Gate F Fuel Farm, and at the Airport ARFF/SRE Building waste oil and anti-freeze storage AST. Each tenant involved in the

storage or transfer of fuel is responsible for maintaining their own spill response resources on each of their vehicles and at fuel storage locations.

15.0 INSPECTIONS

The Airport conducts regular inspections of all OHM storage areas including fuel storage tanks, mobile refuelers, waste storage area, and drum storage areas. Inspections are conducted by properly trained Airport personnel and are recorded on inspection sheets. Inspection sheets are kept on file at the Airport Operations office for a minimum of three years, as required by 40 CFR 112.7. Mobile refueler and Gate F Fuel Farm inspection sheets are included as Appendix D and G.

15.1 Daily Inspections

On a daily basis, Airport personnel conduct inspections of Airport mobile refuelers and the Gate F Fuel Farm for the following:

Mobile refuelers are inspected for:

1. General Condition;
2. Filter Sumps;
3. Filter differential pressure;
4. Deadman control operation;
5. Brake Interlocks;
6. Nozzle fueling pressure
7. Hoses, Swivels and Nozzles;
8. Ground reels, cables, and clamps;
9. Fire extinguishers
10. Tanker troughs;
11. Tanker sumps;
12. Condensation in air tanks;
13. Ladders
14. Mechanics tools; and
15. Diesel fuel level.

The Gate F Fuel Farm is inspected for:

1. Tank sumps;

2. Fuel sumps;
3. Filter sumps;
4. Hoses, swivels, and nozzles;
5. Ground reels, cables, and clamps;
6. Fire extinguishers;
7. Waste fuel tanks;
8. Differential pressure; and
9. Primary pressure.

Hand Pump Operation

- Prior to hand pump usage by Airport staff, verify that the stormwater drain valve located adjacent to the secondary containment structure is in the closed position.
- Operate hand pump as necessary to obtain fuel sample.
- After sample collection, verify hand pump is in the closed position.

Stormwater Drain Valve

- Following a rain event, Inspect the concrete secondary containment pad and both interior drainage sumps for visual and olfactory evidence of OHM. Collect a representative sample of accumulated rainwater in a clear container and record the observations on the inspection form. If no visual or olfactory indication of OHM is observed, the accumulated rainwater within the secondary containment is assumed to be free of OHM.
- Next, open the first manhole cover (marked "DRAIN") in front of the Gate F Fuel Farm located between the storm water valve and the fuel farm. Cones or other means to mark the open hole must be utilized. Collect a representative sample of accumulated rainwater from within the manhole in a clear container and record the observations on the inspection form. If no visual or olfactory indication of OHM is observed, the accumulated rainwater within the drain manhole is assumed to be free of OHM. The adjacent drain valve should then be opened, and the Airport staff member will monitor the draining of the open manhole and secondary containment as the water moves into the adjacent O/WS prior to discharging into the stormwater system.
- Once the draining of the open manhole and secondary containment is completed, the drain valve is to be closed. Additionally, the manhole is to be closed.

15.2 Monthly Inspections

On a monthly basis, Airport personnel conduct inspections of Airport mobile refuelers and the Gate F Fuel Farm for the following:

Mobile refuelers are inspected for:

1. Filtration test;
2. Grounding cable continuity test;
3. Nozzle screens;
4. Signs and placards;
5. Meter seals;
6. Emergency shutdown system;
7. Tanker interiors;
8. Tanker vents and dome covers;
9. Tanker trough drains; and
10. Fire extinguishers.

The Gate F Fuel Farm is inspected for:

1. Grounding cable continuity;
2. Nozzle screens;
3. Signs and placards;
4. Floating suctions; and
5. Fire extinguishers.

15.3 Quarterly Inspections

On a quarterly basis, Airport personnel conduct inspections of Airport mobile refuelers and the Gate F Fuel Farm for the following:

Mobile refuelers are inspected for:

1. General condition;
2. Pressure controls;
3. Secondary pressure; and,
4. Water defense system.
5. The Gate F Fuel Farm is inspected for:

6. Tank high level controls;
7. Emergency shutdown system; and
8. Water defense system.

15.4 Annual Inspections

On a quarterly basis, Airport personnel conduct inspections of Airport mobile refuelers and the Gate F Fuel Farm for the following:

Mobile refuelers are inspected for:

1. Filter elements;
2. Pressure gauges; and
3. Fuel meters.

The Gate F Fuel Farm is inspected for:

1. Interior tank condition;
2. Pressure gauges;
3. Filter elements;
4. Line strainers;
5. Filter/separator heaters;
6. Tank vents;
7. Tank high level controls; and
8. Facility condition.

15.5 Additional Inspection and Maintenance

Annual cleaning and testing of fuel storage tanks are conducted by outside contractors. Tanks are inspected for wall thickness, corrosion, and tank integrity.

40 CFR 112.7(i) mandates; “If a field-constructed above ground container undergoes a repair, alteration, reconstruction, or a change in service that might affect the risk of a discharge or failure due to brittle fracture or other catastrophe, or has discharged oil or failed due to brittle fracture failure or other catastrophe, (the Airport) must evaluate the container for risk of discharge due to brittle fracture or other catastrophe, and as necessary, take appropriate action.”

15.6 PROACTIVE MEASURES AND RECOMMENDATIONS FOR SPILL PREVENTION AND SAFETY

To comply with the Local, State and Federal regulations cited in this Plan, the Airport and its Tenants will continue to incorporate spill prevention and safety measures into daily operations. Refer to Appendix H for examples of the spill response and safety equipment referenced below, and for a list of equipment vendors. The following are general recommendations:

- Storage locations for oil and/or hazardous materials will be indoors or otherwise protected from the environment, and, when feasible, within secondary containment capable of holding 110% of the volume of the largest container or tank.
- All flammables should be kept in a suitable storage locker or facility.
- Each facility should be equipped with enough spill response resources to respond to likely releases from aircraft maintenance, refueling, and fuel transfer.
- Each of the Airport operated mobile refuelers, as well as each fuel transfer depot, should be outfitted with magnetic catch basin covers, Speedi-dry™, a "pop-up pool" to contain a release of up to 65 gallons, and other approved response equipment.
- Quantities of hazardous materials should be kept to a minimum. Only frequently used hazardous materials should be kept in storage. Expired, obsolete, or otherwise unused hazardous materials should be disposed of properly.
- Empty drums and containers should be properly disposed of and not allowed to accumulate in bulk.
- Refueling and fuel transfer should only occur in areas that are covered by an impervious layer of asphalt or concrete.
- Waste oil storage by the Airport and its Tenants shall comply with Federal, State, and local regulations related to waste accumulation volume and time limits. Waste oil drums shall be clearly labeled, and all manifests kept on file for three years.

Indoor liquid hazardous materials should be stored in a location such that a spill from the largest container or tank will be contained or absorbed. All hazardous materials should be stored in flame retardant storage lockers and transferred to proper dispensing containers prior to use.

- Compressed gases should be stored in locations protected from vehicles traffic, including forklifts, by protective bollards or concrete walls or dikes.

- General waste should be separated from hazardous waste prior to disposal. Hazardous waste, including hazardous waste containers, should not be disposed of in general waste dumpsters.
- Safety Data Sheets (SDS) shall be posted in an area that is obvious to all employees in the case of an emergency (i.e. in area of use). SDSs shall be updated regularly. Emergency eyewash and shower stations shall be located in areas where oil and/or hazardous materials are used.
- Aircraft de-icing should only be performed in the designated area.
- Delivery of fuel from transport vehicles to storage tanks shall be supervised by a properly trained employee or supervisor.
- Transfer of fuel to mobile refuelers or aircraft shall only by conducted by properly trained employees.
- Whenever possible, biodegradable materials should be substituted for hazardous materials.

16.0 REFERENCES

Epsilon Associates, Inc. November 2004. Spill Pollution Control and Countermeasures Plan for Nantucket Memorial Airport, Nantucket, Massachusetts.

Federal Aviation Administration FAR 139 Airport Certification Manual, Barnstable Municipal Airport.

Horsley Witten Group, Inc. July 2003 (Revised). Spill Prevention Control and Countermeasures Plan, Barnstable Municipal Airport.

Massachusetts Department of Environmental Protection. April 3, 2006. Massachusetts Contingency Plan: Massachusetts Department of Environmental Protection, Bureau of Waste Site Cleanup, 310 CMR 40.0000.

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Massachusetts Board of Fire Prevention Regulations. June 16, 2003. Massachusetts Comprehensive Fire Safety Code, Tanks and Containers, 527 CMR 9.00.

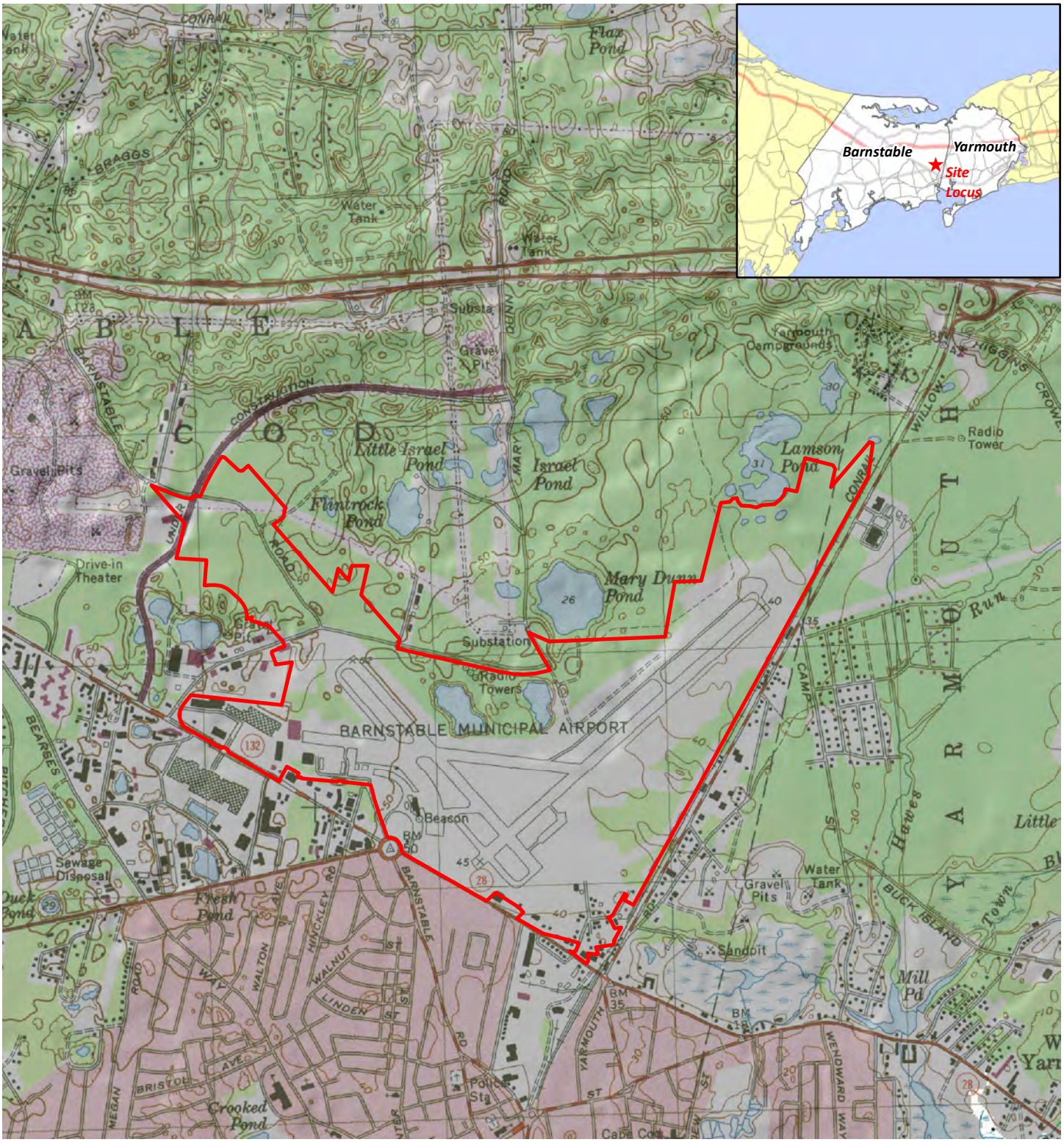
Massachusetts Department of Environmental Protection. See their homepage at www.state.ma.gov/dep

Massachusetts Department of Environmental Protection. 2000. Massachusetts Hazardous Waste Regulations: Massachusetts Department of Environmental Protection, 310 CMR 30.

U.S. Environmental Protection Agency. July 17, 2002. Environmental Protection Agency Federal Regulations 40 CFR 112.
U.S. Environmental Protection Agency, Oil Program. See their homepage at www.epa.gov/oilspill/

FIGURES

Figure 1 – USGS Locus
Figure 2 – Oil and Hazardous Materials Storage Map
Figure 3 – Site Plan



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*2016 NAIP imagery service

Legend

Barnstable Municipal Airport Property Boundary

N

0 2,000

1" = 2,000 feet

Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A • Unit 1 • Sandwich, MA 02563
508-833-6600 • horsleywitten.com

USGS Locus
Barnstable Municipal Airport
Hyannis, MA

Date: 11/18/2019 Figure 1

*Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Israel Pond
Flint Rock Pond
Lamson Pond
Mary Dunn Pond
Upper Gate Pond
Lewis Pond

THORNTON DRIVE
INDEPENDENCE DRIVE
BREEDS HILL ROAD
KIDDS HILL ROAD
SOUTH FLINT ROCK ROAD
MARY DUNN ROAD
WILLOW STREET
ATTUCKS LANE
AIRPORT ROAD
JEFFERSON AVENUE
COOLIDGE ROAD
GRANT ROAD
ADAMS ROAD
WASHINGTON AVENUE
BUCHANAN ROAD
LINCOLN AVENUE
CAMP STREET
YARMOUTH ROAD
ROSARY LANE
BUCK ISLAND ROAD
MARY DUNN WAY
MAHER ROAD
ENGINE HOUSE ROAD
CORPORATION STREET
WAREHOUSE ROAD
HYANNIS VILLAGE
HIRAM AVENUE
ALICIA ROAD
BEARSES WAY
QUAKER ROAD
WALTON AVENUE
COMPASS CIRCLE
HINCKLEY ROAD
SPRUCE STREET

Cape Air
-500-gal. AST of waste oil
-100-gal. AST of Avgas
-55-gal. drums of waste oil
-55-gal. drum of hydraulic oil
-55-gal. drums used oil filters
-55-gal. drums of anti-freeze

Rectrix Aerodrome
-55-gal. AST of Jet A Fuel
-55-gal. drum of Reclaimable Jet A Fuel
-55-gal. drums of waste oil
-55-gal. drum of waste absorbent
-12/19 Spill of 1-2 gal. of Jet Fuel

Griffin Avionics
-55-gal. drums of waste oil
-55-gal. drum of avgas
-55-gal. drum used oil filters

Gate F Fuel Farm
- Three 20,000-gal. ASTs of Jet A fuel
- One 4,000-gal. AST of gasoline
- One 4,000-gal. AST of diesel
- 11/2019 Spill of 51-gal. of Jet A fuel

Griffin Fuel Island
- Two 10,000-gal. USTs of Avgas 100 LL Fuel

Allies Air
-55-gal. drums of waste oil

AMA Nantucket Inc.
-55-gal. drums of waste oil
-55-gal. drum of mineral spirits

Cape Flight Instruction
-55-gal. drums of waste oil
-55-gal. drums of anti-freeze
-55-gal. drum of used oil filters

Hertz
-10,000-gal. UST of gasoline-
-250-gal. container of car washer fluid (deicer)

Avis
-250-gal. container of car washer fluid (deicer)

Rectrix/Air Cape Cod Gate P Fuel Farm
- One 10,000-gal. AST of Jet A fuel
- One 10,000-gal. AST of Avgas 100 LL fuel
-55-gal. drum of Waste Jet A Fuel
-55-gal. drum of Avgas
-55-gal.drum waste absorbent

ARFF/SRE Building
-150-gal. anti-freeze and 350-gal. waste oil split double walled AST (outside)
-55-gal. drums of anti-freeze
-55-gal. drums of waste oil, hydraulic oil, grease, and other oils

Legend

Barnstable Municipal Airport Property Boundary

Mobile Refueler Parking Areas

Note:
AST = Above ground storage tank
UST = Underground Storage Tank
Avgas = Aviation Gas
LL = Low Lead
ARFF/SRE = Aircraft Rescue and Fire Fighting/Snow Removal Equipment

N

0 800

1" = 800 feet

Property = 645 acres

Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A • Unit 1 • Sandwich, MA 02563
508-833-6600 • horsleywitten.com

Oil and Hazardous Materials (OHM) Storage Map and Spill Locations Barnstable Municipal Airport Hyannis, MA

Date: 1/10/2020

Figure 2

**Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services*

**2016 NAIP imagery service*

Document Path: H:\Projects\HYA\14105 BMA On-Call Eng Services\GIS\Maps\191230_SPCCP OHM Storage Map.mxd

last modified: 01/16/20 printed: 01/16/20 by ln H:\Projects\HYA\14105 BMA On-Call Eng Services\SWPPP\Drawings\Current Drainage Plan\151229 - Drainage Plan.dwg

DRAINAGE AREA A

DRAINAGE AREA E

DRAINAGE AREA F

DRAINAGE AREA G

DRAINAGE AREA O

DRAINAGE AREA N

DRAINAGE AREA C

DRAINAGE AREA B

DRAINAGE AREA D

DRAINAGE AREA M

DRAINAGE AREA H

DRAINAGE AREA I

DRAINAGE AREA J

DRAINAGE AREA K

DRAINAGE AREA L

VORTECHS WATER QUALITY UNIT

VORTECHS WATER QUALITY UNITS

INFILTRATION BASIN

UNDERGROUND RECHARGE STRUCTURES

D/WS AND PUMP STATION

DISCHARGE CONTROL VALVES

MARY DUNN POND

UPPER GATE POND

LEWIS POND

RUNWAY 15/33 (5252' X 150')

RUNWAY 6/24 (5425' X 150')

TAXIWAY A

TAXIWAY B

TAXIWAY C

TAXIWAY D

MAIN TERMINAL APRON

EAST RAMP APRON

SOUTH RAMP

LEGEND

RW1533-29 CB: Catchbasin
RW1533-29 LCB: Leaching Catchbasin
RW1533-29 LCB/RD: Leaching Catchbasin / Roof Drain
RW1533-29 LCB/UGDC: Leaching Catchbasin with Underground Discharge Chamber
RW1533-29 LB: Leaching Basin with No Catchment
O/WS: Oil Water Separator
Airport Property Line
BIO: Bioretention Basin
T31 VORTECH: CONTECH Water Quality Structure

NOTE:

All locations of buildings, utilities, and surface features derived from Town of Barnstable, Massachusetts, Geographic Information System. Location and nature of stormwater utilities based upon data provided by Edwards and Kelcey Barnstable Municipal Airport Drainage Plan (07/07), and field inspection of select utilities by Horsley Witten on July 15, 2008.

AIRPORT BUILDINGS/AREAS TABLE

NO.	BUILDING
1	RECTRIX AERODOME CENTER HANGAR
2	CAPE AIR/NANTUCKET AIR HANGAR
3	GRIFFIN AVIONICS
4	GRIFFIN AVIONICS FUEL STATION
5	SPECIALIZED AUTOMOTIVE
6	HANGAR 2 – CAPE AIR / AIRPORT MAINTENANCE
7	GATE F FUEL FARM
8	HANGAR BUILDING (VACANT)
9	ALLIES AIR
10	MAIN TERMINAL BUILDING
11	MAIN TERMINAL GENERATOR
12	AIR TRAFFIC CONTROL TOWER (ATCT)
13	SOUTH RAMP DEICING PAD
14	AIRPORT ARFF/SRE FACILITY
15	RECTRIX/AIR CAPE COD
16	RECTRIX/AIR CAPE COD FUEL FARM
17	AIRPORT LIGHTING VAULT
18	BMA T-HANGAR
19	AMA NANTUCKET INC.
20	CAPEFLIGHT INSTRUCTION
21	HYANNIS HANGAR LLC
22	HEXAGON HANGAR
23	KINGSBURY AVIATION (BUILDING 1)
24	KINGSBURY AVIATION (BUILDING 2)
25	STEAMSHIP AUTH. PARKING LOT
26	HERTZ CAR WASH
27	AVIS CAR WASH
28	BUDGET TRUCK RENTAL

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

Horsley Witten Group
Sustainable Environmental Solutions
www.horsleywitten.com
90 Route 6A
Sandwich, MA 02563
508-833-6600 voice
508-833-3150 fax

Date: 12/31/2019 | Designed By: GWTH | Drawn By: GWTH | Checked By: JEL

Plan Title:

SITE PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

Prepared For:
Barnstable Municipal Airport
480 Barnstable Road
Hyannis, MA 02601
(508) 775-2020

Revisions

1	12-27-11	ERK	JEL Update to Drainage Plan
2	4-13-12	GH	JEL Update to Drainage Plan
3	4-27-12	GH	JEL Update to Drainage Plan
4	1-25-13	GH	JEL Update to Drainage Plan
5	7-29-13	GH	JEL SWPPP Figure 3
6	9-30-15	GH	JEL SWPPP Figure 3
7	12-29-15	GH	JEL SWPPP Figure 3
8	12-31-19	LEN	PAC Update to Drainage Plan

Project Number: 14105

Figure: 3

APPENDIX A

CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA

Federal Regulation 40 CFR 112.20, Appendix C, requires a facility to certify whether or not it is considered to pose a substantial harm. A determination of substantial harm status is based on the criteria below.

Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

The facility does not transfer oil over water. The facility does have a total oil storage capacity greater than or equal to 42,000 gallons.

Does the facility have a total oil storage capacity greater than or equal to 1,000,000 gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground storage tank plus sufficient freeboard to allow for precipitation within any aboveground storage tank area?

No, the facility does not have a total oil storage capacity greater than or equal to 1,000,000 gallons.

Does the facility have a total oil storage capacity greater than or equal to 1,000,000 gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to 40 CFR 112, or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (see Appendix E to 40 CFR 112, section 13, for availability) and the applicable Area Contingency Plan.

No, the facility does not have a total storage capacity greater than or equal to 1,000,000 gallons.

Does the facility have a total oil storage capacity greater than or equal to 1,000,000 gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to 40 CFR 112, or a comparable formula) such that a discharge from the facility would shut down a public drinking water intake.

No, the facility does not have a total storage capacity greater than or equal to 1,000,000 gallons.

Does the facility have a total oil storage capacity greater than or equal to 1,000,000 gallons and has the facility experienced a reportable spill in an amount greater than or equal to 10,000 gallons within the last 5 years?

No, the facility does not have a total storage capacity greater than or equal to 1,000,000 gallons.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Signature: _____

Name:_____

Title:_____

Date:_____

APPENDIX B

RAINWATER INSPECTION FORM

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

RAINWATER INSPECTION FORM

After rain events, the Barnstable Municipal Airport is required to inspect the secondary containment structure at the Gate F Fuel Farm to ensure that retained rainwater will not cause a discharge as described in 40 CFR§ 112.1(b) upon release. As required by 40 CFR§ 112.8(c)(3)(iii), the Airport must keep adequate records of these inspections and events where drainage of uncontaminated rainwater from secondary containment occurs.

Following a rain event, an Airport staff member will perform an inspection of any standing water within the concrete secondary containment structure and both interior sumps. The inspection will include the collection of a representative rainwater sample in a clear container for visual and olfactory analysis for indications of oil and/or hazardous materials (OHM).

If no visual or olfactory evidence of OHM is observed within the sample, the Airport staff member will record the observations on the inspection form and will proceed with discharging accumulated rainwater from the concrete secondary containment structure and interior sumps. The Airport staff member must observe the entire drainage of accumulated rainwater. While draining is occurring, the Gate F Fuel Farm must not be utilized for fuel sample collection and/or fuel transfers. Upon completion, the Airport staff member **must** close the drain valve. Under no circumstance is the drain valve allowed to remain open after the rainwater discharge. Details for completing the accumulated rainwater discharge is set forth below.

- Complete a full walk around the Gate F Fuel Farm to inspect for any visual signs of a potential leak from the ASTs and confirm that the alarm monitoring system is operating properly. Inspect the concrete secondary containment pad and both interior drainage sumps for visual and olfactory evidence of OHM. Collect a representative sample of accumulated rainwater in a clear container and record the observations on the inspection form. If no visual or olfactory indication of OHM is observed, the accumulated rainwater within the secondary containment is assumed to be free of OHM.
- The drain valve should then be opened, and the Airport staff member will monitor the draining of the secondary containment as the water moves into the adjacent O/WS prior to discharging into the stormwater system.
- Once the draining of the secondary containment is completed, the drain valve is to be closed.

RAINWATER INSPECTION FORM

PERSONNEL COMPLETING INSPECTION:

INSPECTION PERSONNEL:	ORGANIZATION / TITLE:

INSPECTION DATE: _____ INSPECTION TIME: _____

CONFIRM INSPECTION COMPLETED FOR ACTIVE LEAKS / SIGNS OF POTENTIAL LEAKS.

FULL WALK AROUND OF FUEL FARM: _____
ALL SENSORS IN NORMAL ("GREEN") MODE: _____

VISUAL AND OLFACTORY ASSESSMENT OF RAINWATER IN SECONDARY CONTAINMENT STRUCTURES SHOULD BE RECORDED ON THIS RAINWATER INSPECTION REPORTING FORM. ALL RECORDS ARE TO BE MAINTAINED AT THE AIRPORT MANAGER'S OFFICE.

ASSESSMENT SUMMARY:

_____
_____
_____
_____
_____
_____
_____
_____

LOCATION	TIME:	COLOR:	ODOR:	CLARITY:	FLOATING SOLIDS:	SETTLED SOLIDS:	SUSPENDED SOLIDS:	FOAM:	OIL SHEEN:	OTHER INDICATORS
Secondary Containment Concrete Pad										
Interior Sumps										

TIME VALVE OPENED: _____ TIME VALVE CLOSED: _____

RAINWATER INSPECTION FORM IS TO BE STORED IN THE AIRPORT MANAGER'S OFFICE

APPENDIX C

FUEL DELIVERY AND TRANSFER PROCEDURES

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

FUEL DELIVERY AND TRANSFER PROCEDURES

The following general procedures should be followed during fuel delivery, transfer of fuel, and refueling of aircraft. Refer to the Airport's Fuel Fire Safety Training manual for additional descriptions of fuel transfer procedures.

Vendor Delivery of Fuel

1. The vendor driver shall coordinate delivery time with the appropriate Tenant supervisor and/or HYA personnel.
2. All paperwork associated with the order should be inspected prior to transfer to ensure delivery of proper fuel quantity and type.
3. Appropriately trained tenant and/or HYA personnel shall be present throughout entire fuel transfer.
4. Tenant and/or HYA personnel shall identify the appropriate storage tank for delivery, and identify/inspect all mechanisms or piping associated with the fuel transfer.
5. Tenant and Airport storage tanks should be inspected for capacity prior to fuel transfer.
6. All vehicles in the fuel transfer area shall be turned off, and sources of ignition eliminated.
7. A sample of the vendor fuel, for delivery, should be obtained in a suitable container. The sampled fuel should be inspected for color and odor. Results should be recorded and compared against original order.
8. The delivery vehicle should be parked within the designated fuel delivery area as directed by Airport personnel. Wheels should be chocked to prevent vehicle movement during transfer. Magnetic storm drain covers shall be placed on all catch basins within proximity of the delivery vehicle prior to fuel transfer.
9. A drip pan shall be placed under the fuel rack on the vendor fuel delivery truck.
10. During fuel transfer, at least one attendant shall be present at all times. There shall be no use of automated pumping systems.
11. The delivery vehicle shall be properly grounded and bonded, in accordance with the Airport's Fuel Fire Safety Training Manual.
12. The truck operator shall be responsible for making all connections between the truck and any piping involved in the fuel transfer. Both the operator and tenant or HYA personnel shall inspect transfer piping, prior to fuel transfer.

13. Spill response resources should be readily available, for cleanup or containment of small spills. The tenant or HYA personnel shall be responsible for the proper management of small spills.
14. The truck operator and tenant or HYA personnel shall be aware of all safety and fuel flow control devices, such as pump shut-off and “dead-man” switches.
15. Once fuel transfer has begun, the tenant or HYA personnel shall inspect all fittings, couplings, hoses, and associated transfer materials, for evidence of leaking.
16. In the event of a release, or threat of release, due to a failure in any of the fuel transfer equipment, fuel flow shall cease immediately, and appropriate response actions shall be taken to clean up the release.
17. Fuel transfer shall not occur unless all transfer equipment is being used as intended and approved.
18. Upon completion of fuel transfer, the truck operator shall ensure that all transfer lines are cleared of their contents before disconnect, so as to avoid any releases during disconnect.
19. Tenant or HYA personnel shall be responsible for the proper stowing of all facility transfer lines.
20. Any sample material, or absorbent materials used to clean up a small release shall be properly disposed of by a licensed disposal company. Proper paperwork shall be kept on file, and the Spill Response Coordinator or Program Manager notified.

Transfer of Fuel to Mobile Refuelers

1. Transfer of fuel to mobile refuelers shall be done by appropriately trained tenant and HYA personnel (the operator), only.
2. All fuel flow control devices, such as “dead-man” switches, shall be inspected for proper operation prior to fuel transfer.
3. All vehicles in the fuel transfer area shall be turned off, and sources of ignition eliminated.
4. The Mobile Refueler should be parked within the designated fuel delivery area as directed by Airport personnel. Wheels should be chocked to prevent vehicle movement during transfer. Magnetic storm drain covers shall be placed on all catch basins within proximity of the vehicle prior to fuel transfer.
5. A drip pan shall be placed under the fuel rack on the vehicle.
6. The operator shall ensure that spill response resources to clean up or contain a small spill are readily available.

7. The mobile refueler shall be properly grounded and bonded, in accordance with the Airport's Fuel Fire Safety Training Manual.
8. Fuel transfer equipment, including hose material and couplings, should of an appropriate material, and shall be inspected by the operator prior to use.
9. Transfer lines should implement dry-disconnect fittings and couplings that prevent the flow of fuel until properly connected to a mated coupling.
10. The operator shall be aware of all safety and fuel flow control devices, such as pump shut-off and "dead-man" switches.
11. The operator shall gauge mobile refueler tank capacity prior to fuel transfer, and monitor tank level during transfer.
12. Once fuel transfer has begun, the operator shall inspect all fittings, couplings, hoses, and associated transfer materials, for evidence of leaking.
13. During fuel transfer, at least one attendant shall be present at all times. There shall be no use of automated pumping systems.
14. In the event of a release, or threat of release, due to a failure in any of the fuel transfer equipment, fuel flow shall cease immediately, and appropriate response actions shall be taken to cleanup the release.
15. Fuel transfer shall not occur unless all transfer equipment is being used as intended and approved.
16. Upon completion of fuel transfer, the operator shall ensure that all transfer lines are cleared of their contents before disconnect, so as to avoid any releases during disconnect.
17. The Operator shall be responsible for the proper stowing of all facility transfer lines.
18. Any absorbent materials used to clean up a small release shall be properly disposed of by a licensed disposal company. Proper paperwork shall be kept on file, and the Spill Response Coordinator or Program Manager notified.

Transfer of Fuel to Aircraft

1. Transfer of fuel from mobile refuelers to aircraft shall be done by appropriately trained tenant and HYA personnel (the operator), only.
2. All fuel flow control devices, such as "dead-man" switches, shall be inspected for proper operation prior to fuel transfer.
3. All vehicles in the fuel transfer area shall be turned off, and sources of ignition eliminated.

4. Wheels should be chocked to prevent vehicle movement during transfer. Magnetic storm drain covers shall be placed on all catch basins within proximity of the vehicle prior to fuel transfer.
5. A drip pan shall be placed under the fuel rack on the vendor fuel delivery truck.
6. All fueling of aircraft shall be completed outside of hangars or maintenance buildings.
7. Personnel shall observe the locations of any stormwater catch basins and avoid refueling at or near such structures.
8. The operator shall ensure that spill response resources to clean up or contain a small spill are readily available.
9. The mobile refueler and aircraft shall be properly grounded and bonded, in accordance with the Airport's Fuel Fire Safety Training Manual.
10. Fuel transfer equipment, including hose material and couplings, should of an appropriate material, and shall be inspected by the operator prior to use.
11. Fuel transfer lines should be located, or "run-out" so as to avoid being run-over, or otherwise damaged, by vehicle traffic in the area.
12. Transfer lines should implement dry-disconnect fittings and couplings that prevent the flow of fuel until properly connected to a mated coupling.
13. The operator shall be aware of all safety and fuel flow control devices, such as pump shut-off and "dead-man" switches.
14. Before fueling, the operator shall ensure that all related aircraft equipment is prepared to accept transferred fuel.
15. While fuel is being transferred, the operator shall position themselves to visually observe transfer lines for leaks or other failures.
16. During fuel transfer, at least one attendant shall be present at all times. There shall be no use of automated pumping systems.
17. Once fuel transfer has begun, the operator shall inspect all fittings, couplings, hoses, and associated transfer materials, for evidence of leaking.
18. In the event of a release, or threat of release, due to a failure in any of the fuel transfer equipment, fuel flow shall cease immediately, and appropriate response actions shall be taken to clean up the release.
19. Fuel transfer shall not occur unless all transfer equipment is being used as intended and approved.
20. Upon completion of fuel transfer, the operator shall ensure that all transfer lines are cleared of their contents before disconnect, so as to avoid any releases during disconnect.

21. The Operator shall be responsible for the proper stowing of all facility transfer lines.
22. Any absorbent materials used to clean up a small release shall be properly disposed of by a licensed disposal company. Proper paperwork shall be kept on file, and the Spill Response Coordinator or Program Manager notified.

APPENDIX D

MOBILE REFULERS INSPECTION SHEET

DAILY [illegible]

AIRCRAFT FUELING EQUIPMENT CHECKS

STATION | EQUIPMENT ID# | MONTH | YEAR

DAILY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1. GENERAL CONDITION																															
2. FILTER SUMPS - RECORD RATINGS																															
3. FILTER DIFFERENTIAL PRESSURE - Record PSI																															
4. DEADMAN CONTROLS																															
5. SAFETY INTERLOCKS																															
6. NOZZLE FUELING PRESSURE - Record PSI																															
7. HOSES, NOZZLES & SWIVELS																															
8. STATIC REELS, CABLES & CLAMPS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9. LIFT PLATFORMS																															
10. FIRE EXTINGUISHERS																															
11. SURGE/WASTE TANKS																															
12. AIR TANKS																															
13. REFUELING TRUCK TROUGHS																															
14. REFUELING TRUCK SUMPS - RECORD RATINGS																															
15. REFUELING TRUCK BOTTOM LOADING PRE-CHECK																															
IDENDIFICATION OF PERSON PERFORMING TASKS OR PERSON ACCEPTING RESPONSIBILITY THAT TASKS WERE PERFORMED																															

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); NU = NOT USED; NA = NOT APPLICABLE

RATING OF SUMP SAMPLES: SOLIDS - 1 = CLEAN, 2 = SLIGHT, 3 = PARTICULATE, 4 = DIRTY; MOISTURE CONTENT - A = BRIGHT, B = HAZY, C = CLOUDY, D = WET (FREE WATER), E = SURFACTANTS

REMARKS:

ATA FORM 103.04A
2/16/04

RETAIN ON FILE FOR 12 MONTHS

Monthly Truck Check.

AIRCRAFT FUELING EQUIPMENT CHECKS

STATION	EQUIPMENT ID#	MONTH	YEAR

MONTHLY	CONDITION CODE	DATE	CHECKED BY
1. FILTRATION & FREE WATER TESTS			
2. STATIC SYSTEM CONTINUITY TEST (RECORD RESULTS)			
3. NOZZLE SCREENS			
4. FUEL HOSES			
5. SIGNS, LABELS & PLACARDS			
6. METER SEALS			
7. FIRE EXTINGUISHERS			
8. EMERGENCY SHUTDOWN SYSTEM			
9. DEADMAN CONTROL SYSTEM			
10. LIFT PLATFORMS			
11. REFUELING TRUCK INTERIORS			
12. REFUELING TRUCK VENTS & DOME COVERS			
13. REFUELING TRUCK TROUGH DRAINS			
Check First			

REMARKS:

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); N/U = NOT USED; N/A = NOT APPLICABLE

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103-64B
11/9/95

PAGE 04/09
HYA OPERATIONS
05/18/2010 15:57 5087787771

QUARTERLY & ANNUAL FUEL CHECK.

QUARTERLY, SEMI-ANNUAL & ANNUAL AIRCRAFT FUELING EQUIPMENT CHECKS

STATION | EQUIPMENT ID# | YEAR

QUARTERLY CHECKS	1ST QTR	2ND QTR	3RD QTR	4TH QTR
1. VEHICLE INSPECTION — CONDITION CODE				
CHECKED BY & DATE:				
2. PRESSURE CONTROLS — CONDITION CODE				
RECORD PRIMARY & SECONDARY FUEL PRESSURE SETTING (PSI)				
CHECKED BY & DATE:				
3. WATER DEFENSE SYSTEM - EXTERNAL CHECK — CONDITION CODE				
CHECKED BY & DATE:				
4. INTERNAL VALVE CHECK — CONDITION CODE				
CHECKED BY & DATE:				

SEMI-ANNUAL FUEL FACILITY CHECKS (ONLY REQUIRED IF USING REUSEABLE COUPLINGS ON FUEL HOSES)	ID #	ID #	ID #	ID #	ID #
1. PERIODIC HOSE PRESSURE TEST					
TEST PRESSURE (PSI)	N/A				
CONDITION CODE					
CHECKED BY & DATE:					

ANNUAL CHECKS
1. FILTER ELEMENT CHANGE — CONDITION CODE
CHECKED BY & DATE:
2. FUELING & DIFFERENTIAL PRESSURE GAUGES — CONDITION CODE
CHECKED BY & DATE:
3. METER CALIBRATION — CONDITION CODE
CHECKED BY & DATE:
4. WATER DEFENSE SYSTEM INSPECTION & TES — CONDITION CODE
CHECKED BY & DATE:
REMARKS:

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); NIU = NOT USED; N/A = NOT APPLICABLE

ATA FORM 103.04C
11/9/05

RETAIN ON FILE FOR 12 MONTHS

Daily Sump LOG Trucks.

PAGE 05/09

HYA OPERATIONS

05/18/2010 15:57 5087787771

MONTH_____ YEAR:_____

INSPECTION LOG OF AIRCRAFT FUEL SERVICING EQUIPMENT

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TANK	SUMP																				
FILTER	SUMP																				

		21	22	23	24	25	26	27	28	29	30	31
TANK	SUMP											
FILTER	SUMP											

TRUCK NO:_____

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TANK	SUMP																				
FILTER	SUMP																				

		21	22	23	24	25	26	27	28	29	30	31
TANK	SUMP											
FILTER	SUMP											

TRUCK NO:_____

Example: indicating sumped fuel was clear and bright done by J.Doe

NOTE Solids 1) clear 2) slight 3) particulate 4) dirty

Water a) bright b) hazy c) cloudy d) wet

0-07 form 10/98

QUARTERLY INSPECTION - MOBILE FUELERS

Airport: *HYA* Fueling Agent: _____

Date: ____/____/____ Inspector: _____

S - Satisfactory U - Unsatisfactory R - Remark Below	SERIAL #:			SERIAL #:			SERIAL #:		
	S	U	R	S	U	R	S	U	R
	JET A / AVGAS			JET A / AVGAS			JET A / AVGAS		
No Smoking sign in cab									
Flammability Signs/Haz Mat Placards all sides									
Bonding Cables and Clips functional									
Deadman Control for all nozzles									
2 Fire Extinguishers - Proper Type/ Inspected									
Emergency Shutoffs operable and marked									
No Fuel Leaks - Hoses/Gaskets/Valves									
Vehicle Exhaust System - Shielded/Leak free									
No evidence of Smoking- No ashtray in cab									
Vehicle Parking - 10' apart/50' from buildings									
Explosion proof electrical / Light lens intact									
Ignition Sources (Clothing, Shoes, Matches)									
Brake Interlock System									

Proper Fueling Procedures Observed				No. of Mobile Fuelers
Fueling Personnel Meet Training Requirements				Jet A _____
Fueling Personnel Training Records maintained				100 LL _____
				Other _____

Remarks:

APPENDIX E

RELEASE NOTIFICATION FORM

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

RELEASE NOTIFICATION FORM

A. Incident Description

Date:_____ Reporter:_____
Time of Incident:_____ Time of Report:_____
Facility Name:_____
Facility Telephone #:_____
Location of Release:_____
Facility Location:_____
Street Address:_____

B. Release Description

Type of material(s) released:_____
Estimated quantity released:_____
Were there injuries to anyone on site?:_____
Did the release impact a catch basin or storm drain?:_____
Describe the ground surface that the release occurred over:_____
_____
Did the release enter or travel along underground utilities (pipes, conduit, etc.)?:
_____
How did the release occur?_____
_____
Other details:_____
_____
Are any surface waters impacted, or in danger of being impacted?
_____
_____

C. Spill Response Program Notification Requirements

IN THE EVENT OF ANY RELEASE, NOTIFY:
PROGRAM MANAGER KATIE SERVIS 508-775-2020
SPILL RESPONSE COORDINATOR ROBERT HOLZMAN 508-778-7770
BARNSTABLE MUNICIPAL AIRPORT RESCUE AND FIREFIGHTING 508-778-7770
IF RELEASE IS LOCATED ON WATER DEPT. PROPERTY NORTH OF 15/33, NOTIFY:
SUPT. THOMAS ROONEY 508-364-9359

D. **State and Federal Notification Requirements**

Does Massachusetts Department of Environmental Protection (DEP) Require Notification?

- **A release of ≥ 10 Gallons Gas/Diesel/Oil requires DEP Notification**
- **A release of an unknown quantity requires DEP notification**

If required, notify Massachusetts DEP at 888-304-1133*

Does the USCG/Federal National Response Center (NRC) Require Notification?

- **A discharge to navigable waters requires USCG/NRC notification**
- **A sheen on water surface is considered a harmful quantity**

If required, notify USCG/NRC at 800-424-8802*

* **record any instructions/information from DEP or NRC in the space provided below.**

E. **Generator Information**

Generator/Responsible Party: _____
Street Address: _____
City/Town: _____State:_____
Contact Person: _____Title: _____
Contact Telephone Number: _____

F. **Documentation of Notification**
(record time of agency/contact notification, instructions, reporting number, etc. here)

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

APPENDIX F

SPILL RESPONSE INVENTORY

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

SPILL RESPONSE RESOURCE INVENTORY

The following items are maintained in a rapid response trailer, located outside the Airport Operations Building. The following quantities were accurate as of January 2020, the date of last inventory. Additional response resources are found on each mobile refueler, and at each fuel transfer depot.

Item	Quantity
Absorbent Spill Pads	200
Speedi-Dry ™	3.5 bags
Spaghetti Booms	(2) 10’ Booms
Pig Mats™ (for acids)	1 roll
Peat Absorbent	5 bags
Lite-Dri™ Absorbent	7 bags
Sea Booms	2
Oil-only Booms	6 rolls
Booms	2 rolls
Miscellaneous Booms	2 rolls
Kollect-a-Kem Pads™	100
Tear off Roll	(1) 25’ Boom
ARG-DRI™ Dikes	2 boxes
Face shields	12
ARG™ Pillows	24
Acid-Resistant PVC gloves	12 pair
Hard Hats	7
Boot covers	60
Tyvek™, x-large coverall	50
Tyvek™, large coverall	50
Tyvek™, medium coverall	50
Vinyl gloves	25
Grate covers	1
Drum patch kit	1
Coal shovel	1
Spade shovel	1
Squeegee	2
Push broom	1
Chocks	1 set
35-Gallon Drum	1

APPENDIX G

FUEL FARM INSPECTION SHEETS

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HYA OPERATIONS
05/18/2010 15:57 5087787771

FUEL TANK

FUEL FACILITY CHECKS

STATION | FACILITY | MONTH | YEAR

DAILY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1. GENERAL CONDITION OF TANK YARD																															
2. SECURITY, FIRE & SAFETY DEFICIENCIES																															
3. HOSES, SWIVELS, NOZZLES & COUPLERS																															
4. STATIC REELS, CABLES AND CLAMPS																															
5. FIRE EXTINGUISHERS																															
FUEL LEAKS																															
STORAGE TANK SUMP																															
FILTER SUMP																															
FILTER DIFF. PRESSURE																															
IDENTIFICATION OF PERSON PERFORMING TASKS OR PERSON ACCEPTING RESPONSIBILITY THAT TASKS WERE PERFORMED																															

MONTHLY		DATE	SIGNATURE
1. FILTRATION & FREE WATER TEST			
2. BONDING CABLE CONTINUITY			
3. NOZZLE SCREENS			
4. SIGNS, LABELS & PLACARDS			
5. FLOATING SUCTION			

MONTHLY		DATE	SIGNATURE
6. FIRE EXTINGUISHERS			

CONDITION CODES:

S = SATISFACTORY
C = COMMENT
N/U = NOT USED
N/A = NOT APPLICABLE

NOTE - RECORD SUMP RESULTS & FILTER DIFFERENTIAL PRESSURE ON SEPARATE FORM.

REMARKS:

ATA FORM 103.01A
11/9/2005

RETAIN ON FILE FOR 12 MONTHS

FUEL FARM MONTHLY CHECK.

AIRCRAFT **FUEL FACILITY CHECKS**		STATION	EQUIPMENT ID#	MONTH YEAR
MONTHLY	CONDITION CODE	DATE	CHECKED BY	
1. FILTRATION & FREE WATER TEST				
2. STATIC SYSTEM CONTINUITY TEST				
3. NOZZLE SCREENS				
4. FUEL HOSES				
5. SIGNS, PLACARDS & LABELS				
6. METER SEALS				
7. FIRE EXTINGUISHERS				
8. EMERGENCY FUEL SHUTOFF SYSTEM				
9. LIFT PLATFORMS				
10. TANK INTERIORS				
11. TANK VENTS & DOME COVERS				
12. TANK TROUGH DRAINS				
REMARKS:				

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); NU = NOT USED; NA = NOT APPLICABLE

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103.04B
2/15/04

Figure 6-2.8. Form 103.04B - Monthly

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HYA OPERATIONS
05/18/2010 15:57 5087787771

Quarterly Fuel Farm Check.

QUARTERLY FUEL FACILITY CHECKS

	STATION		FACILITY		QUARTER	YEAR
1. EMERGENCY SHUTOFF SYS.	ID #	ID #	ID #	ID #	ID #	ID #
DATE & CONDITION CODE						
CHECKED BY:						
2. WATER DEFENSE SYSTEMS						
DATE & CONDITION CODE						
CHECKED BY:						
3. TANK HIGH LEVEL CONTROLS						
DATE & CONDITION CODE						
CHECKED BY:						
4. RECLAIM TANK INSPECTION						
DATE & CONDITION CODE						
RECORD INSP. RESULTS ON 103.07						
CHECKED BY:						

SEMI-ANNUAL FUEL FACILITY CHECKS (ONLY REQUIRED IF USING REUSEABLE COUPLINGS ON FUEL HOSES)

1. PERIODIC HOSE PRESS. TEST	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #
TEST PRESSURE (PSI)										
DATE & CONDITION CODE	N/A									
CHECKED BY:										

REMARKS:

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); N/U = NOT USED; N/A = NOT APPLICABLE

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103.01C
11/9/05

Farm

ANNUAL FUEL FACILITY CHECKS

	STATION		FACILITY		YEAR	
1. STORAGE TANK INTERIORS	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #
DATE & CONDITION CODE										
CHECKED BY:										
2. DIFFERENTIAL PRESS GAUGES										
DATE & CONDITION CODE										
CHECKED BY:										
3. FILTER ELEMENTS										
DATE & CONDITION CODE										
CHECKED BY:										
4. FILTER/SEPARATOR HEATERS										
DATE & CONDITION CODE										
CHECKED BY:										
5. TANK VENTS										
DATE & CONDITION CODE										
CHECKED BY:										
6. CATHODIC PROTECTION										
DATE & CONDITION CODE										
CHECKED BY:										
7. LINE STRAINERS										
DATE & CONDITION CODE										
CHECKED BY:										
8. WATER DEFENSE SYSTEM										
DATE & CONDITION CODE										
CHECKED BY:										

REMARKS:

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); N/U = NOT USED; N/A = NOT APPLICABLE

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103.01D
11/9/05

QUARTERLY INSPECTION - FUEL STORAGE AREAS

Airport: *HYA* **Fueling Agent:** _____

Date: ____/____/____ **Inspector:** _____

S - Satisfactory U - Unsatisfactory R - Remark Below	Jet A Section			100LL Section			Other _____		
	S	U	R	S	U	R	S	U	R
Fencing / Locks / Signs									
Piping protected from vehicles									
No Smoking signs posted									
Deadman Controls for loading station									
2 Fire Extinguishers-Inspected/Accessible									
Boldly Marked Emergency Cutoffs-Location									
No Fuel Leaks									
Bonding wire/clips at loading stations/operable									
Piping / Pumps bonded & grounded									
No vegetation or materials to spread fire									
No evidence of Smoking									
Hoses in good condition									
Explosion Proof Electrical Equipment									

Remarks:

APPENDIX H

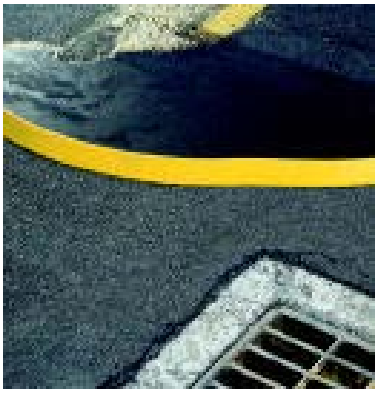
SPILL RESPONSE PRODUCTS AND VENDORS

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

SPILL RESPONSE PRODUCTS AND VENDORS

Storm Drain Hood

Magnetic Storm Drain Cover


Containment Berm

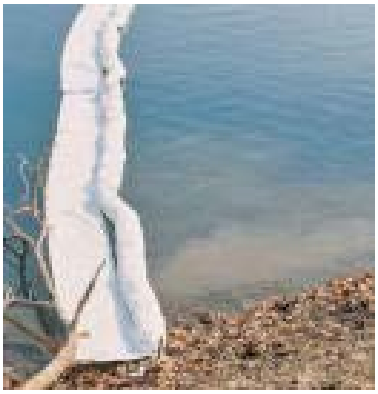
Collapsible Containment Pool

Loose Absorbent

Leak/Spill Containment

Secondary Containment

Portable Spill Kit



Absorbent Boom

Secondary Containment

Vendor Information:

New Pig Corporation
1-800-HOT-HOGS® (468-4647)
www.newpig.com

Arcus Absorbents, Inc.
1-877-227-6727
www.arcusabsorbents.com/

Interstate Products
1-800-474-7294
www.interstateproducts.com

West Coast Spill Supplies
1-888-548-3800
www.spillsupply.com/

SpillKits911
1-800-474-5911
www.spillkits911.com/

Guardian Environmental
1-860-350-2200
www.guardianenvironmental.com

Complete Environmental Products, Inc.
1-800-444-4237
www.cepsorbents.com/

Ben Meadows
1-800-241-6401
www.benmeadows.com

Appendix N

Database Reviews

Table 5-4 - MassDEP Sites Within and Surrounding Project Area
Draft Environmental Impact Report
Cape Cod Gateway Airport
Hyannis, MA

RTN	Date Release reported	Site Name	Site Address	Description	On/Off Property	Site Status (Open/Closed)	Status	Contaminants of Concern	Responsible Parties
Airport Property									
4-15715	8/30/2000	Capeflight Hangar, Barnstable Municipal Airport	110 Mary Dunn Road, Hyannis, MA	This RTN is associated with the release of approximately 37 gallons of aviation fuel during transfer from an AST to a refueling truck which spilled to the pavement and a nearby catch basin. Immediate Response Actions included the removal of fuel-impacted water/solids from the pavement and catch basin and subsurface investigation. Following response actions, the site achieved regulatory closure with a Class A-1 RAO.	On	Closed	RAO (A-1)	Aviation Fuel	Capeflight
4-28769	4/26/2021	Hyannis Airport	125 Mary Dunn Way	This RTN is associated with the sudden release of approximately 16 gallons of aviation fuel and 3 gallons of motor oil to an unpaved area from an aircraft accident in April 2021. Immediate Response Actions included the excavation and disposal of petroleum-impacted soils and confirmatory soil sampling. Following response actions, the site achieved regulatory closure with a PSNC.	On	Closed	PSNC	Petroleum	Cape Air/Nantucket Airlines
4-10187	1/6/1994	Motor Vehicle Garage	16 Hinkley Road, Hyannis, MA	This RTN is associated with the release of approximately 110 gallons of gasoline from a gasoline dispensing system to a parking lot. The gasoline flowed along a paved swale and collected in an unpaved depression in the landscaped parking lot. Immediate Response Actions included removal of free-standing gasoline, excavation of petroleum-impacted soils, and confirmatory soil sampling. Following response actions, the site achieved regulatory closure with a Class A-2 RAO.	On	Closed	RAO (A-2)	Gasoline	NYNEX
4-11841	12/1/1995	Barnstable Municipal Airport	480 Barnstable Road, Hyannis, MA	This RTN is associated with TPH, VOCs, and metals detected in soil and groundwater above reportable concentrations. This site was linked to a Tier Classified Site under primary RTN 4-823.	On	Closed	PSNC	TPH, VOCs, Metals	Barnstable Municipal Airport
4-14472	1/23/1999	Barnstable Municipal Airport		This RTN is associated with the sudden release of 10-20 gallons of aviation jet fuel when an aircraft inadvertently steered off the runway resulting in the rupture of the plane's fuel tank. Limited response actions were subsequently conducted, including the excavation and disposal of petroleum-impacted soil. Following response actions, the site achieved regulatory closure with a Class A-2 RAO.	On	Closed	RAO (A-2)	Petroleum	Town of Barnstable, Barnstable Municipal Airport
4-15600	1/15/2000	Barnstable Municipal Airport		This RTN is associated with the sudden release of 25 gallons of aviation fuel which occurred during refueling activities due to an incorrect valve setting on a refueler truck. Immediate Response Actions included the application of absorbent material, and disposal of the drummed absorbent material. Following response actions, the site achieved regulatory closure with a Class A-1 RAO.	On	Closed	RAO (A-1)	Petroleum	Barnstable Municipal Airport
4-12687	12/2/1996	Barnstable Municipal Airport		This RTN is associated with concentrations of TPH detected in soil above the applicable RCS-1 standard in several borings installed at a series of leaching pits used for operations at the hangar. Response actions were conducted under a RAM Plan, which included the removal of petroleum-impacted soils. This site was linked to primary RTN 4-823.	On	Closed	PSNC	TPH	Barnstable Airport
4-14860	7/14/1999	Barnstable Municipal Airport		This RTN is associated with the release of 10-20 gallons of aviation fuel that spilled out of a tanker truck and ran to an unpaved area. Immediate Response Actions included the excavation and disposal of petroleum-impacted soil. Following response actions, the site achieved regulatory closure with a Class A-2 RAO.	On	Closed	RAO (A-2)	Fuel Oil	Cape Flight, LTD
4-21315	6/18/2008	Runway 24, Barnstable Municipal Airport		This RTN is associated with the release of approximately 160 gallons of aviation jet fuel that occurred during an aircraft transportation accident. Response actions included the excavation and disposal of petroleum-impacted soils and confirmatory sampling. Following response actions, the site achieved regulatory closure with a Class A-2 RAO.	On	Closed	RAO (A-2)	EPH	
4-26225	7/24/2016	Barnstable Municipal Airport		This RTN is associated with the release of approximately 30 gallons of aviation fuel to pavement and a catch basin during an aircraft accident in 2016. Immediate Response Actions included the application of absorbent materials, removal of petroleum-impacted water from the catch basin, and disposal of petroleum-impacted media. Following response actions, the site achieved regulatory closure with a PSNC.	On	Closed	PSNC	EPH	Dr. Basia AcAnaw (Aircraft Owner)
4-26347	11/10/2016	Barnstable Municipal Airport		This RTN is associated with onsite and offsite historical releases of PFAS and 1,4-dioxane to soil and groundwater. Response actions are ongoing and include assessment and remediation. Remedial actions performed to date include soil capping at two areas on Airport property where Aqueous Film Forming Foam (AFFF) containing PFAS was used.	On	Open	Phase IV	PFAS	The Cape Cod Gateway Airport
4-26358	9/21/2016	Barnstable Municipal Airport		This RTN is associated with the release of aviation jet fuel during the removal of an UST in September 2016. Immediate Response Actions included the excavation and disposal of petroleum-impacted soils and collection of confirmatory soil samples. Following response actions, the site achieved regulatory closure with a PSNC.	On	Closed	PSNC	Aviation Fuel	Barnstable Municipal Airport
4-28577	10/29/2020	Upper Gate and Lewis Ponds, Barnstable Airport		This RTN is associated with the presence of Polycyclic Aromatic Hydrocarbons (PAHs) and lead in surficial sediments above the MassDEP Sediment Screening Criteria at Upper Gate and Lewis Ponds. The sediments in the ponds were sampled as part of the North Ramp Phase II Comprehensive Site Assessment (CSA) required for the investigation and remediation of a hydrocarbon and chlorinated solvent plume at the Airport, for the North Ramp. Because it was unclear if the source of contamination was from the release at the North Ramp or from typical compounds found in stormwater runoff on the Property, the MassDEP assigned RTN 4-28577 on October 29, 2020 to the sediment investigation. According to the November 2021 Phase I Initial Site Investigation (ISI) report, a proposed Phase II Scope of Work was drafted and includes researching historical documents to determine a potential source, sampling additional ponds to evaluate anthropogenic background conditions, sampling runoff water from floor drains, and performing an ecological risk assessment. Results of this work will be documented in a future CSA report, or a Permanent Solution Statement. This work is scheduled to start by October 2023.	On	Open	Phase II	PAHs and Lead	The Cape Cod Gateway Airport
4-29807	5/10/2023	Barnstable Airport - Construction Site		This RTN is associated with the release of over 10 gallons of hydraulic fluid onto soil from a hydraulic hose on a dump truck. Immediate Response Actions were subsequently conducted, including the excavation and disposal of petroleum-impacted soil and confirmatory soil sampling. Following response actions, the site achieved regulatory closure with a PSNC.	On	Closed	PSNC	Hydraulic Fluid	C.C. Construction Inc.

Table 5-4 - MassDEP Sites Within and Surrounding Project Area
Draft Environmental Impact Report
Cape Cod Gateway Airport
Hyannis, MA

RTN	Date Release reported	Site Name	Site Address	Description	On/Off Property	Site Status (Open/Closed)	Status	Contaminants of Concern	Responsible Parties
Airport Property (continued)									
4-12911	3/20/1997	Griffin Avionics, Inc.	630 Barnstable Road, Hyannis, MA	Following the discovery of subsurface groundwater contamination in the vicinity of several hangers and underneath the airport runway, the Airport conducted a Phase II Comprehensive Site Assessment to identify the extent of contamination across the entire facility. That investigation revealed three areas of suspected contamination in the vicinity of the Griffin Avionics site including a dry well that received effluent from a floor drain system in the older southern portion of the building; an underground oil/water separator that received effluent from a floor drain system in the newer northern portion of the building (subsequently replaced by a new oil/water separator system); and a second dry well that was associated with the former oil/water separator. Results of subsurface soil and groundwater sampling determined that contaminated soil should be excavated beneath the North Dry Well. The site was linked to a Tier Classified site in 2000.	On	Closed	RTN closed	Petroleum, Metals	Griffin Avionics
4-23484	8/20/2011	Rectrix Aerodrome Center	730 Barnstable Road, Hyannis, MA	This RTN is associated with a release of approximately 15 gallons of aviation fuel to the paved tarmac during overfilling of on airplane in August 2011. Immediate response actions consisted of applying absorbent materials to the pavement and drumming and disposing of absorbent materials. Following response actions, the Site achieved regulatory closure with a Class A-1 RAO.	On	Closed	RAO (A-1)	EPH	Rectrix Aerodrome Center
4-1081	7/15/1991	Ray Blackburn Auto Salvage	Airport Road	This RTN is associated with historical releases of OHM resulting from the site's former use as an auto salvage facility. Response Actions were conducted under a RAM Plan which included excavation of contaminated soil, removal of solid waste, and in-situ soil treatment. Following response actions, the site achieved regulatory closure with a Class A-2 RAO.	On	Closed	RAO (A-2)	TPH, EPH, VPH, Lead	Blackburn Auto Salvage
4-12048	4/29/1997	BAP Airport Hanger 1	Boardman/Polando Field	Airline Realty Trust submitted a DPS for releases of chlorinated solvents and petroleum compounds to soil and groundwater. The release was attributed to several upgradient sources including leaching pits at the Cape Air Hanger and Griffin Air, and jet fuel contamination associated with former USTs. This RTN was linked to RTN 4-823 in October 1997, associated with releases at the Cape Air Hanger. Response actions for RTN 4-823 included disposal of petroleum containing liquid and solids from leaching pits, installation of a soil vapor extraction and air sparging system to treat petroleum-contaminated soil and groundwater, additional soil and groundwater sampling, and injection of remedial additives to treat the chlorinated solvents and petroleum compounds. Following response actions, the site achieved regulatory closure with a PSNC.	On	Closed	DPS	EPH, VPH, VOCs	Barnstable Municipal Airport
4-823	11/10/1989	Barnstable Airport		This RTN is associated with the release of VOCs and petroleum-related compounds to soil and groundwater from historical leaching pits. Three other RTNs (4-11841, 4-12048, and 4-12687) are linked to this RTN. Response actions were conducted under a RAM Plan which included installation of a soil vapor extraction and air sparaging system and post remediation groundwater monitoring. Following response actions, the site achieved regulatory closure with a PSNC.	On	Closed	PSNC	EPH, VPH, VOCs	Barnstable Municipal Airport
Adjacent to the Airport Property									
4-937	6/19/1990	Cape Cod Company	100 Breeds Hill Road, Barnstable, MA	This RTN is associated with the release of chloroform detected in groundwater 1,200 feet southeast from the Cape Cod Company, suspected to be leaking from a historical septic tank. Comprehensive response actions commenced, including the installation of a groundwater treatment system. By November 2000, the chloroform levels at the site achieved a condition of No Significant Risk and the site achieved closure with a Class A-2 RAO.	Off	Closed	RAO (A-2)	Chloroform	Cape Cod Company and Anheuser-Busch
4-19452	10/31/2005	Lot 147	114 Iyannough Road, Hyannis, Massachusetts	This RTN was issued as a result of VPH detections in monitoring wells on the property and was attributed to the migration of these compounds from one or more off-site release sources. A DPS was issued on June 23, 2006. The DPS statement did not list the Airport as a potential upgradient source.	Off	Closed	DPS	VPH	N/A
4-26692	6/5/2017	Barbyann's Pub	120 Airport Road, Hyannis, MA	This RTN is associated with the release of approximately 20-30 gallons of hydraulic fluid after a hydraulic line ruptured during a trash pick up. Response actions include application of absorbent material, excavation and disposal of petroleum-impacted soil, and confirmatory soil sampling. Following response actions, the site achieved regulatory closure with a PSNC.	Off	Closed	PSNC	Hydraulic Oil	Allied Waste Services, Inc.
4-25602	5/7/2015	Hyannis Water Treatment Plant	15 Old Yarmouth Road (PSS says 47 Old Yarmouth Road), Hyannis, MA	This RTN is associated with the release of approximately 25 gallons of sodium hypochlorite to asphalt and soil from a punctured 55-gallon plastic drum. Response actions included application of absorbent booms, excavation and disposal of impacted media, and post-excavation soil sampling. Following response actions, the site achieved regulatory closure with a PSNC.	Off	Closed	PSNC	Sodium hypochlorite	Cape Cod Express and United Water
4-11972	3/5/1996	Former Mobil Service Station No. 11636 (Formerly 01-QJH)	156 Iyannough Road, Hyannis, MA	This RTN is associated with the detection of petroleum contamination encountered during the removal of a drywell in October 1992. Soil samples were collected, and the results of the sampling indicated that the site achieved regulatory closure with a class A-2 RAO.	Off	Closed	RAO (A-2)	TPH, Toluene, ethylbenzene, xylenes, and PCE	Mobil Oil Corporation
4-13422; 4-15997; 4-18891; and 4-19209	10/9/1997 - 1/20/2005			The RTNs are associated with multiple fuel and waste oil releases that occurred at the site. Comprehensive Response Actions included the installation of a temporary SVE/AS system, soil and groundwater sampling, soil excavation, UST system replacement, and application of absorbent materials. Following response actions, the site achieved regulatory closure with a Class A-2 RAO.	Off	Closed	RAO (A-2)	BTEX, MTBE, EPH, chromium, arsenic, and lead	Mobil Business Resources Corporation
4-862	9/15/1989	Former Mobil Service Station No. 11636 (Formerly 01-QJH)		This RTN was issued after petroleum impacts were encountered in soil during a Phase I Limited Site Investigation. Response actions included the excavation and disposal of petroleum-impacted soil, and soil and groundwater sampling. Following response actions, the site achieved regulatory closure with a Class A-2 RAO.	Off	Closed	RAO (A-2)	BTEX, EDB, and Lead	Mobil
4-976	9/19/1989	BAP Property	47 Old Yarmouth Road, Hyannis, MA	In 1999 the Barnstable Water Company received a letter indicating that the property at 47 Old Yarmouth Road had been identified as a LTBI by DEP because water from Maher Well No.1 containing VOCs was being discharged to a wetland. Following additional review, it was determined that the discharged water contained concentrations of VOCs below what was already present in the groundwater and was not impacting the wetlands.	Off	Closed	LSP Opinion Letter	VOCs	N/A
4-368	7/15/1987	Cyprus Realty Trust BAP	157 Airport Road, Hyannis, MA	This site was listed as a LTBI in September 1993. Per the MDEQE, water from an existing well was sampled for VOCs. All results were non detect. In addition, no public records were observed at town hall or the fire department that indicate any release of OHM occurred at the site. The MDEQE determined that no further action was warranted.	Off	Closed	DEPNDS	Unknown	None

Table 5-4 - MassDEP Sites Within and Surrounding Project Area
Draft Environmental Impact Report
Cape Cod Gateway Airport
Hyannis, MA

RTN	Date Release reported	Site Name	Site Address	Description	On/Off Property	Site Status (Open/Closed)	Status	Contaminants of Concern	Responsible Parties
Adjacent to the Airport Property (continued)									
4-14306	7/2/1998	Chris McNulty's Service Center	181 Spring Street, Hyannis MA	This RTN is associated with elevated concentrations of TPH detected in shallow soil. Response actions were conducted under a RAM Plan which included the excavation and disposal of petroleum-contaminated soils and confirmatory soil sampling. Following response actions, the site achieved regulatory closure with a Class A-2 RAO.	Off	Closed	RAO (A-2)	TPH	Matthew 22 Realty Trust c/o Mr. Richard H. Robinson
4-13202	8/7/1997	Roberts Auto Wholesale	202 Yarmouth Road, Hyannis, MA	On July 23, 1998, Mr. Douglas E. MacDonald submitted a DPS associated with TPH and naphthalene detections above the applicable GW-1 standard from a monitoring well located on his property (a car and boat sales lot with a garage). Mr. MacDonald indicated that no fuel USTs have been present at the property. The source of the petroleum contamination was attributed to several possible upgradient sources, including the Barnstable Municipal Airport (RTN 4-823).	Off	Closed	DPS	TPH, Naphthalene	N/A
4-13201	8/12/1997	Grandpa's Used Bikes	210 Yarmouth Road, Hyannis, MA	On January 26, 1998, Mrs. Milton Babcock submitted a DPS associated with TPH and naphthalene detections above the applicable GW-1 standard from monitoring wells located on her property (Grandpa's Bikes). The property owner indicated that no more than 5 quarts of waste oil was generated on a yearly basis. The source of the petroleum contamination was attributed to several possible upgradient sources, including the Barnstable Municipal Airport (RTN 4-823). Response actions for RTN 4-823 were conducted under a RAM Plan and included installation of a soil vapor extraction and air sparging system and post remediation groundwater monitoring. Following response actions, the site achieved regulatory closure with a PSNC.	Off	Closed	DPS	TPH, Naphthalene	N/A
4-25408	11/19/2014	Mass Coastal Railroad	215 Iyannough Road, Hyannis, MA	This RTN is associated with the release of approximately 150 gallons of diesel fuel from a locomotive. Response actions included application of absorbent material, excavation and disposal of 30 cubic yards of diesel-impacted soil, and removal of approximately 220 gallons of diesel-impacted water generated during spill response activities. Following response actions, the site achieved closure with a PSC.	Off	Closed	PSC	VPH, EPH, and lead	MA Coastal Railroad
4-392	10/15/1987	Airport Exxon (Former BP Service Station)	230 Iyannough Road, Hyannis, MA	This RTN was issued as a result of petroleum compound detections in monitoring wells on the property and was attributed to the migration of these compounds from one or more off-site release sources. A DPS was issued in October 2002. The DPS Statement did not list the Airport as an upgradient source.	Off	Closed	DPS	TPH, BTEX Naphthalene, EDB, MTBE, and lead	N/A
4-435	1/15/1987	Former Candle Company	24 Plant Road, Hyannis, MA	This RTN is associated with the detection of low concentrations of toluene in groundwater and MTBE in soil samples. The site was listed and classified a Non-Priority Confirmed Disposal Site by the DEP in March 1990. In October 1993, the site became subject to the requirements of the new MCP and required the submittal of a LSP Opinion. Additional investigations were conducted in soil and groundwater, and results indicated that that the petroleum concentrations previously reported do not constitute a release of OHM. Therefore, this property is not subject to the notification requirements of 310 CMR 40.0300.	Off	Closed	LSPNFA	Petroleum	24 Plant Road Condo Association
4-13433	10/16/1997	Transatlantic Motors	25 Falmouth Road, Hyannis, MA	This RTN is associated with a release of approximately 20 gallons of waste oil onto a paved surface during a loading operation. Response actions consisted of application of absorbent material within the release area. Following response actions, the site achieved regulatory closure with a Class A-1 RAO.	Off	Closed	RAO (A-1)	Waste Oil	Safety Kleen Corporation
4-26	10/15/1987	Former Charter Station No. 6843	258 Iyannough Road, Hyannis, MA	This RTN is associated with a release of gasoline and benzene, toluene, ethylbenzene, and xylene (BTEX) to soil and groundwater from leaking underground storage tanks at the former gasoline station. The release was reported to the MassDEP on October 15, 1987. Response actions have included additional assessment, excavation and disposal of petroleum-impacted soils, and installation of a groundwater pump and treatment system. Following response actions, the Site achieved a Temporary Solution with a Class C-1 RAO in July 2010. Based on the information reviewed, the Disposal Site boundary extends onto the Airport property. Therefore, this release is likely impacting soil and/or groundwater conditions at the Airport property.	Off	Open	Temporary Solution	TPH, BTEX Naphthalene, EDB, MTBE, and lead	MPG Corporation
4-934	6/14/1990	Robie's Refrigeration, Inc.	279 Yarmouth Road, Barnstable, MA	A Notice of Responsibility was issued by MassDEP to Robie's Refrigeration as result of the presence of dichlorodifluoromethane (Freon-12) in the Maher Wellfield. Subsurface investigations including groundwater sampling was conducted at the Site and no contaminants exceeded the applicable standards. The site achieved regulatory closure with a Class A-1 RAO.	Off	Closed	RAO (A-1)	Freon	Robie's Refrigeration
4-15370	3/20/2000	Parcel 125	33 Brooks Road, Barnstable, MA	This RTN was reported to the MassDEP on March 20, 2000, for releases of an unknown chemical of unknown type from 55-gallon drums located at 33 Brooks Road. This RTN was linked to RTN 4-824, and a Completion Statement was received by the MassDEP in August 2000.	Off	Open	RTN closed	Petroleum	NA
4-824	11/1/1989	Atwood Oil		This RTN is associated with releases of petroleum to soil and groundwater from the historical use of the property as a bulk fuel plant. The release was first reported to the MassDEP on November 1, 1989. Response actions included soil and groundwater sampling, removal of drums and USTs, soil excavation for offsite disposal, installation of a soil vapor extraction and air sparging system, installation of a barrier filter trench, injecting remedial additives to groundwater, and installing a cap over select contaminated areas. The site achieved a Temporary Solution with a Class C-1 RAO in August 2012. Groundwater monitoring for dissolved-phase petroleum compounds is ongoing. According to the latest Post-Temporary Solution Status Report (dated June 26, 2019) the release did not impact groundwater conditions at the Airport property.	Off	Open	RAO (C-1)	Petroleum	
4-27674	2/20/2019	Alleyway behind TJ Maxx	360 Barnstable Road, Hyannis MA	This RTN is associated with the release of approximately 40 gallons of hydraulic oil from the hydraulic line of a garbage truck which spilled onto the surrounding asphalt and entered two catch basins. Response actions included the application of absorbent materials and cleaning the impacted catch basins. Following response actions, the site achieved regulatory closure with a PSNC.	Off	Closed	PSNC	Hydraulic Oil	Allied Waste Services, Inc. and JPA Management, LLC
4-21245	5/22/2008	Catch Basin	38 Baxter Road, Hyannis, MA	This RTN is associated with the release of approximately two gallons of 15% sodium hypochlorite that had been poured into a stormwater catch basin. Response actions consisted of vacuuming the affected catch basin, removal of soil and water from within the catch basin, and collecting post-remediation pH readings of the water inside the catch basin. Following response actions, the site achieved regulatory closure with a Class A-1 RAO.	Off	Closed	RAO (A-1)	Sodium hypochlorite	Cape Cod Commercial Linen Service

Table 5-4 - MassDEP Sites Within and Surrounding Project Area
Draft Environmental Impact Report
Cape Cod Gateway Airport
Hyannis, MA

RTN	Date Release reported	Site Name	Site Address	Description	On/Off Property	Site Status (Open/Closed)	Status	Contaminants of Concern	Responsible Parties
Adjacent to the Airport Property (continued)									
4-1179	7/15/1992	Former Shell-Branded Service Station #137771	381 Camp Street, Hyannis, MA	This RTN was listed as a Location to be Investigated (LTBI) on July 15, 1992. In January 1995, results of a Phase I Initial Site Investigation concluded that concentrations of BTEX were detected above reportable concentrations in soil and groundwater. Response actions have included additional assessment, and installation of an air sparging/soil vapor extraction remediation system. The site is currently in Remedy Operation Status. Based on this site's location to the Airport (i.e., downgradient), and the location of disposal site boundary, it is unlikely that the release is impacting soil and/or groundwater conditions at the Airport property.	Off	Open	Phase V ROS	VPH and EPH	Equilon Enterprises LLC d/b/a Shell Oil Products US
4-14213	9/25/1998	No Location Aid		This RTN is associated with a detection of the PAH benzo(b)fluoranthene above its applicable reportable concentration for soil (RCS-1) in a sidewall confirmatory sample, as part of a waste oil UST removal, on September 25, 1998. RTN 4-14213 was linked to RTN 4-1179 on October 1, 1999, and is currently being managed by RTN 4-1179.	Off	Closed	RTN closed	No information provided	No information provided
4-251	12/6/1985	Puritan Pontiac BDP	460 Yarmouth Road, Barnstable, MA	This RTN is associated with potential releases of lacquer thinner and waste oil from damaged drums, and petroleum from an underground storage tank. Subsurface investigations including soil and groundwater sampling were conducted. No significant impacts to soil and groundwater were identified. The MDEQE determined that no further action was warranted.	Off	Closed	DEPNFA	Petroleum	Puritan Pontiac
4-23065	1/17/2011	No Location Aid	518 Yarmouth Road, Barnstable, MA	This RTN is associated with the release of approximately 200 gallons of non PCB mineral dielectric fluid onto the asphalt parking lot after four transformers fell off a flatbed truck resulting in the rupture of two transformers. The release impacted the paved parking lot and one catch basin. Response actions included the application of absorbents and disposal of oily water within the storm water system. Following response actions, the Site achieved closure with a Class A-1 RAO.	Off	Closed	RAO (A-1)	Mineral Oil	Howard Transportation
4-17651	2/10/2003	Shell Station	590 Iyannough Road, Hyannis, MA	This RTN is associated with the petroleum release previously reported under RTN 4-18156. Following a review of soil analytical results, an RNF was submitted for the detection of C11-C22 aromatic hydrocarbons at concentrations exceeding reportable concentrations. Response actions included excavation and disposal of petroleum-contaminated soils and groundwater sampling. Following response actions, the Site achieved regulatory closure with a Class A-2 RAO.	Off	Closed	RAO (A-2)	Gasoline	Shell Oil Company
4-18156	2/24/2003	Shell Station		This RTN is associated with a release of petroleum to soil and groundwater from an area approximately 20 feet long by 20 feet wide, beneath the hydraulic lifts at the former gasoline filling station. Response actions included excavation and disposal of petroleum-impacted soils and groundwater sampling. Following response actions, the Site achieved regulatory closure with a Class A-1 RAO.	Off	Closed	RAO (A-1)	Gasoline	Shell Oil Company
4-461	1/15/1988	Bouy S Realty BDP	599 Iyannough Road, Hyannis, MA	No supporting documents	Off	Closed	DEPNDS	NA	NA
4-26340	10/29/2016	Christmas Tree Shop/Trader Joes	655 Iyannough Road, Hyannis, MA	This RTN is associated with the release of approximately 6-7 gallons of hydraulic fluid onto an asphalt parking lot. Response actions included application of absorbent material. No soil or catch basins were impacted by the release. Following response actions, the site achieved regulatory closure with a PSNC.	Off	Closed	PSNC	Hydraulic Oil	KEE Enterprises
4-11988	8/29/1998	Packaging Industries Plant #1	70 Airport Road, Hyannis, MA	This RTN is associated with potential release of PCE from Plant #1. Additional groundwater investigations at the site determined that concentrations of PCE came to be present in the groundwater from an upgradient source and not from the Plant #1 property. A Class B-1 RAO was submitted to MassDEP in July 1998.	Off	Closed	RAO (B-1)	PCE	Independence Park, Inc.
4-899	May-91	Sears Automotive Center	793 Iyannough Road, Hyannis, MA	This RTN is associated with petroleum releases from seven hydraulic lifts and underground storage tanks associated with the former Sears Automotive Center. Response actions included excavation and disposal of petroleum contaminated soils. Following response actions, the site achieved regulatory closure with a PSNC.	Off	Closed	PSNC	Petroleum	Mayflower Cape Cod, LLC
4-1080	Release first discovered in 1987 - NOR issued on May 3, 1991	Packaging Industries Plants #2 &#3	80-96 Airport Road, Hyannis, MA	This RTN is associated with the historical release of Freon 12 at the former Packing Industries plant. Following a risk characterization, the site achieved regulatory closure with a Class A-2 RAO.	Off	Closed	RAO (A-2)	Freon 12	Independence Park, Inc.
4-28856	6/23/2021	Commercial Property	95 Airport Road, Hyannis, MA	On August 5, 2021, Group 1 Automotive submitted a DPS associated with PFAS detections in monitoring wells located at the property as part of a due diligence investigation. Based on an ASTM Phase I Environmental Site Assessment (ESA), no recent or historical site activities included the storage, use and/or discharge of PFAS compounds. The sources of PFAS in groundwater was attributed to at two potential upgradient sources, including the Cape Cod Municipal Airport (RTN 4-23647) and the Barnstable County Fire Training Academy (RTN 4-26179).	Off	Closed	DPS	PFAS	Group 1 Automotive
4-29244	3/3/2022	Natural Gas Main Installation	Adjacent to 258 Iyannough Road, Hyannis, MA	This RTN is associated with the management of contaminated soil during the installation of a natural gas main along Iyannough Road within the areas of RTN 4-26 and 4-392, under a URAM. At the commencement of URAM activities, approximately 250 cubic yards of impacted soil was transported offsite for proper disposal, and the RTN was closed with a URAM Completion Statement.	Off	Closed	URAM Completion	VOCs, SVOCs, TPH, barium, chromium, lead, and mercury	None (Boston Gas Company is an Agency or Utility on a Right of Way)
4-10573	6/23/1994	Shell Station	Airport Rotary, Hyannis, MA	This RTN is associated with a release of gasoline to soil from leaking underground storage tanks at a former gasoline filling station. Response actions included excavation and disposal of petroleum- impacted soil and groundwater sampling. Groundwater was determined to not be significantly impacted by the release. Following response actions, the site achieved regulatory closure with a Class A-1 RAO.	Off	Closed	RAO (A-1)	Gasoline	Shell Oil Company
4-20777	9/12/2007	Pole 11/3	Attucks Lane, Hyannis, MA	This RTN is associated with the release of approximately 30 gallons of hydraulic fuel onto an asphalt surface after a vehicle line ruptured. The spill did not impact the storm drain system or adjacent soils. No other information was available.	Off	Closed	RAO (A-1)	Hydraulic Oil	NSTAR
4-26164	6/21/2016	In Front of Balise Hyundai	In front of 56 Yarmouth Road, Hyannis, MA	This RTN is associated with the release of approximately 75 gallons of diesel fuel when a passenger vehicle struck a garbage truck along Ridgewood Ave. Response actions included the application of absorbents and recovery of oily water. Following response actions, the site achieved regulatory closure with a PSNC.	Off	Closed	PSNC	Diesel Fuel	Cavossa Disposal

Table 5-4 - MassDEP Sites Within and Surrounding Project Area
Draft Environmental Impact Report
Cape Cod Gateway Airport
Hyannis, MA

RTN	Date Release reported	Site Name	Site Address	Description	On/Off Property	Site Status (Open/Closed)	Status	Contaminants of Concern	Responsible Parties
Adjacent to the Airport Property (continued)									
4-190	8/25/1986	Barnstable County Fire Training Academy	Mary Dunn Road, Barnstable, MA	This RTN is associated with a release of petroleum compounds to soil and groundwater from historical leaking USTs and surficial spills. The release was first reported to the MassDEP on August 25, 1986. Response actions included soil and groundwater sampling, and soil and groundwater treatment via operation of a pump and treat and a soil vapor and air sparging system. The site achieved a Temporary Solution with a Class C RAO in 2001 and is in Remedy Operation Status, which includes monitoring groundwater for petroleum compounds to evaluate monitored natural attenuation. Based on the groundwater sampling results from the latest report, the release has impacted the Airport property. Response actions are ongoing by both the RP and MassDEP.	Off	Open	RAO (C-1)	MTBE, Perchlorate, PFAS, BTEX Chloroform, Naphthalene	Town of Barnstable
4-20021	8/25/2006	Barnstable Fire Academy		This RTN is associated with a release of perchlorate to soil and groundwater from a stockpile of flares used for training purposes. The release was first reported to the MassDEP on August 25, 2006. Response actions included groundwater sampling and installation of a recovery well as part of a pump and treat system. The treatment system was shut down after perchlorate concentrations were persistently below MCP standards, and an IRA Completion report was submitted to MassDEP on November 22, 2010. Based on the compliance status, this release is not likely impacting soil and/or groundwater conditions at the Airport property. This Site is linked to RTN 4-190.	Off	Closed	RTN closed	Perchlorate	Barnstable County
4-26179	8/4/2016	Barnstable County Fire Training Academy	South Flint Rock Road	This RTN is associated with the historical release of PFAS to soil and groundwater and is being managed under an Immediate Response Action (IRA). The release was first reported to the MassDEP on August 4, 2016. Immediate Response Actions included soil Hot Spot removal, site wide capping, select building demolition, and operation/monitoring of a groundwater pump and treat system. Based on results of groundwater samples collected from the Airport property and the assumed groundwater flow direction, this release is likely impacting soil and/or groundwater conditions at the Airport property. The Site is currently in Phase II and response actions are ongoing by both the RP and MassDEP. This release is also linked to RTN 4-190.	Off	Open	Phase II	PFAS	Barnstable County
4-24153	8/27/2012	50 kva Electric Power Distribution Transformer, Utility Pole # 167/40	Near 195 Barnstable Road, Hyannis MA	This RTN is associated with the release of approximately 30 gallons of Mineral Oil Dielectric Fluid from an overhead electric power distribution transformer onto the surrounding asphalt road, asphalt parking lot, and concrete sidewalk. Response actions consisted of application of absorbent material. Following response actions, the site achieved regulatory closure with a Class A-1 RAO.	Off	Closed	RAO (A-1)	Mineral Oil Dielectric Fluid	NSTAR
4-14312	11/6/1988	Southwest Side of Route 132	Route 132, Hyannis, MA	This RTN is associated with the release of approximately 50 gallons of hydraulic fluid to a landscaped area when a hydraulic hose on a digger/line truck broke during installation of a utility pole. Response actions included application of absorbent materials, excavation and disposal of petroleum-impacted soils, and soil sampling. Following response actions, the Site achieved regulatory closure with a Class A-1 RAO.	Off	Closed	RAO (A-1)	Hydraulic Oil	Bell Atlantic
4-14747	5/25/1999	Behind Sears	Route 132, Hyannis, MA	This RTN is associated with the release of approximately 200 gallons of non-PCB transformer oil from a transformer located behind the Sears retail store. Response actions included application of absorbent materials, excavation and disposal of petroleum-impacted soils, and soil sampling. Following response actions, the Site achieved regulatory closure with a Class A-2 RAO.	Off	Closed	RAO (A-2)	Transformer Oil	Sentinel Products Corp.
4-11270	4/6/1995	Southeast of Mary Dunn Pond	6 Airport Way, Barnstable, MA	This RTN is associated with the release of mineral spirits after investigating a fire that occurred at the Site. The Immediate Response Action (IRA) status report indicated total petroleum hydrocarbons (TPH) above the S-1 reporting limit. Response actions included soil sampling, groundwater sampling, and removal of contaminated soil. Following response actions, the Site achieved regulatory closure with a Class A-2 RAO.	Off	Closed	RAO (A-2)	TPH	Benjamin Baxter

General Notes:

1. AST = Aboveground Storage Tank
2. AUL = Activity and Use Limitation
3. IRA = Immediate Response Action
4. CMR = Code of MA Regulation
5. MassDEP = MA Department of Environmental Protection
6. MDEQE = MA Department of Environmental Quality Engineering (precursor to the MassDEP)
7. MCP = MA Contingency Plan
8. LSP = Licensed Site Professional
9. DPS = Downgradient Property Status
10. OHM = Oil and Hazardous Material
11. RAO (A-1) = A Permanent Solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated
12. RAO (A-2) = A Permanent Solution has been achieved. Contamination has not been reduced to background
13. RAO (A-3) = A Permanent Solution has been achieved. Contamination has not been reduced to background and an Activity and Use Limitation (AUL) has been implemented
14. RAO (B-1) = A level of No Significant Risk exists without remedial actions being conducted
15. RAO (C-1) = A temporary cleanup. Although the site does not present a "substantial hazard", it has not reached a level of no significant risk
16. DEPNDS = DEP Not a Disposal Site (MassDEP has determined that these locations did not need to be reported and are not disposal sites
17. DEPNFA = Response actions were conducted for the release/site and MassDEP determined that no further action was needed for the site
18. LSPNFA = response actions were conducted and an LSP has determined that no further action was needed for the site
19. IRA = Immediate Response Action
20. IRAC = Immediate Response Action Completion Report
21. RAM = Release Abatement Measure
22. URAM = Utility Release Abatement Measure
23. ISI = Initial Site Investigation
24. PSS Permanent Solution Statement
25. PSC = Permanent Solution Statement with Conditions
26. PSNC = Permanent Solution Statement with no Conditions PSSNC
27. ROS = Remedy Operation Status
28. RNF = Release Notification
29. RTN = Release Tracking Number
30. UST = Underground Storage Tank
31. VOCs = Volatile Organic Compounds
32. BTEX = benzene, toluene, ethylbenzene, xylenes
33. MTBE = Methyl tert-butyl ether
34. SVOCs = Semi-Volatile Organic Compounds
35. PAHs = Polycyclic Aromatic Hydrocarbons
36. TPH = Total Petroleum Hydrocarbons
37. VPH = Volatile Petroleum Hydrocarbons
38. EPH = Extractable Petroleum Hydrocarbons
39. PCE = Tetrachloroethene
40. PCB = Polychlorinated biphyenls
41. PFAS = per- and poly-fluoroalkyl substances
42. SVE = Soil Vapor Extraction
43. AS = Air Sparge
44. LTBI = Location to be Investigated
45. Information presented based on review of available MassDEP and EDR documents and databases
46. Minor surface spills that did not significantly impact soil and/or groundwater were excluded from this table
47. RP = Responsible Party
48. PRP = Potentially Responsible Party

Appendix O

EDR report

Cape Cod Gateway Airport
480 Barnstable Road
Hyannis, MA 02601

Inquiry Number: 7379392.2s
June 30, 2023

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527 - 21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E2247 - 16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E1528 - 22) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

480 BARNSTABLE ROAD
HYANNIS, MA 02601

COORDINATES

Latitude (North):	41.6699650 - 41° 40' 11.87''
Longitude (West):	70.2818530 - 70° 16' 54.67''
Universal Tranverse Mercator:	Zone 19
UTM X (Meters):	393289.2
UTM Y (Meters):	4613714.5
Elevation:	40 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	11730675 HYANNIS, MA
Version Date:	2018

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140718
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
480 BARNSTABLE ROAD
HYANNIS, MA 02601

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	BARNSTABLE MUNICIPAL	480 BARNSTABLE RD	MA RGA HWS		TP
A2	BARNSTABLE MUNICIPAL	480 BANSTABLE RD., 2	MA UIC		TP
A3	NO LOCATION AID	480 BARNSTABLE RD	MA RGA HWS		TP
A4	140-008 LAWRENCE-LYN	480 BARNSTABLE RD	FINDS, ECHO		TP
A5	AIRPORT	480 BARNSTABLE RD	MA RGA HWS		TP
A6	HERTZ CORP	480 BARNSTABLE RD	FINDS, ECHO		TP
A7	BARNSTABLE MUNICIPAL	480 BARNSTABLE RD	NY MANIFEST		TP
A8	HERTZ CORP	480 BARNSTABLE RD	RCRA-SQG		TP
A9	BARNSTABLE MUNICIPAL	480 BARNSTABLE RD	RCRA-SQG, RI MANIFEST		TP
A10	HERTZ COROPRATION	HERTZ CORP. 480 BARN	MA TIER 2		TP
A11	HERTZ CORP 1715-19	480 BARNSTABLE RD	MA AST		TP
A12	NO LOCATION AID	480 BARNSTABLE ROAD	MA RGA HWS		TP
A13	NO LOCATION AID	480 BARNSTABLE RD	MA SHWS, MA LUST, MA AST, MA RELEASE, MA HW GEN,...		TP
A14	BARNSTABLE MUNICIPAL	480 BARNSTABLE RD	MA SHWS, MA UST, MA RELEASE, MA ASBESTOS, MA...		TP
A15	BARNSTABLE MUNICIPAL	480 BARNSTABLE ROAD	MA TIER 2		TP
A16	THE HERTZ CORPORATIO	480 BARNSTABLE RD	MA TIER 2		TP
A17		480 BARNSTABLE RD	ERNS		TP
B18	HANGAR 2 INC	BARNSTABLE MUNICIPAL	RCRA NonGen / NLR	Lower	297, 0.056, West
B19	HYANNIS AIR SERVICE	BARNSTABLE MUNICIPAL	RCRA NonGen / NLR	Lower	297, 0.056, West
B20	GULL ARI INC	BARNSTABLE MUNICIPAL	RCRA NonGen / NLR	Lower	297, 0.056, West
B21	PROVINCETOWN BOSTON	MUNICIPAL ARPT NORTH	RCRA NonGen / NLR	Lower	300, 0.057, West
B22	TRI AIR FREIGHT INC	BARNSTABLE ARPT	RCRA NonGen / NLR	Lower	331, 0.063, WSW
23	HYA - CAPE COD GATEW		PFAS PART 139 AIRPORT	Higher	468, 0.089, ESE
24	BARNSTABLE AIRPORT	BOARDMAN-POLANDO FLD	MA SHWS, MA RELEASE	Higher	823, 0.156, South
C25	NEAR END OF MARY DUN	6 AIRPORT WAY (REAR)	MA SHWS, MA RELEASE	Higher	1012, 0.192, NE
C26	RUSTY'S INC	55 MARY DUNN RD	MA UST	Higher	1084, 0.205, NE
C27	CAPE FLIGHT	110 MARY DUNN RD	MA SHWS, MA LAST, MA RELEASE	Higher	1116, 0.211, NE
28	HYANNIS AIRPORT	490 BARNSTABLE ROAD	MA SHWS, MA RELEASE	Higher	2093, 0.396, SW
29	MOTOR VEHICLE GARAGE	16 HINKLEY RD	MA SHWS, MA RELEASE	Higher	2107, 0.399, WSW
30	BARNSTABLE WATER TRE	656 MARY DUNNE ROAD	MA LAST, MA RELEASE	Lower	2258, 0.428, NNE
D31	SHELL STATION	AIRPORT ROTARY	MA LUST, MA RELEASE	Higher	2446, 0.463, WSW
E32	BAP AIRPORT HANGER I	BOARDMAN-POLANDO FLD	MA SHWS, MA RELEASE	Higher	2459, 0.466, SE
E33	BARNSTABLE MUNICIPAL	EAST RAMP	MA SHWS, MA RELEASE	Higher	2459, 0.466, SE
D34	SHELL SERVICE STA	590 IYANOUGH RD	MA SHWS, MA LUST, MA RELEASE	Higher	2518, 0.477, WSW
D35	SHELL STATION #13777	590 IYANNOUGH RD	MA SHWS, MA RELEASE, MA HW GEN	Higher	2518, 0.477, WSW
36	POLE DOWN -TRANSFORM	395 BARNSTABLE ROAD	MA SHWS, MA RELEASE	Higher	2563, 0.485, SSW
37	BOUY S REALTY BDP	599 IYANOUGH RD	MA SHWS, MA RELEASE	Higher	2596, 0.492, WSW
F38	CAPE FLIGHT AREA	BARNSTABLE MUNICIPAL	MA SHWS, MA RELEASE	Higher	2658, 0.503, West
F39	GRIFFIN AVIONICS	BARNSTABLE AIRPORT	MA SHWS, MA RELEASE	Higher	2658, 0.503, West

MAPPED SITES SUMMARY

Target Property Address:
480 BARNSTABLE ROAD
HYANNIS, MA 02601

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
40	HYANNIS AIRPORT	125 MARY DUNN WAY	MA SHWS, MA RELEASE	Higher	2712, 0.514, SSE
41	TRANSATLANTIC MOTORS	25 FALMOUTH RD	MA SHWS, MA RELEASE, MA ASBESTOS, MA HW GEN, MA...	Higher	2713, 0.514, SW
42	RAY BLACKBURN AUTO S	AIRPORT RD	MA SHWS, MA RELEASE	Higher	2908, 0.551, WNW
43	CHRISTMAS TREE SHOP/	655 IYANOUGH ROAD (R	MA SHWS, MA RELEASE	Higher	2941, 0.557, WSW
44	BARNSTABLE FIRE TRAI	MARY DUNN RD	MA SHWS, MA RELEASE	Higher	3027, 0.573, NNW
45	REAR ALLEY	360 BARNSTABLE ROAD	MA SHWS, MA RELEASE	Higher	3057, 0.579, SSW
46	ABCO RENTAL CENTER I	181 SPRING ST	MA SHWS, MA RELEASE, MA HW GEN	Higher	3075, 0.582, South
47	BARNSTABLE COUNTY FI	MARY DUNN RD	MA SHWS, MA RELEASE, MA UIC	Lower	3115, 0.590, NNW
48	NAV AUX AIR FACILITY		FUDS	Lower	3169, 0.600, ENE
49	PURITAN PONTIAC BDP	460 YARMOUTH RD	MA SHWS, MA RELEASE, MA HW GEN	Lower	3185, 0.603, ESE
50	BARNSTABLE GETTY STA	BARNSTABLE RD	MA SHWS, MA RELEASE	Higher	3196, 0.605, SSW
51	CAPE COD COMMERCIAL	LEWIS ROAD AT BAXTER	MA SHWS, MA RELEASE	Higher	3227, 0.611, SSW
52	IN FRONT OF BALISE H	519 YARMOUTH ROAD	MA SHWS, MA RELEASE	Lower	3232, 0.612, ESE
53	ATWOOD OIL (HUBBARD	33 BROOKS RD	MA SHWS, MA LAST, MA RELEASE, MA UIC	Lower	3234, 0.613, SSE
G54	URAM	258 IYANNOUGH ROAD	MA SHWS, MA LUST, MA RELEASE	Lower	3254, 0.616, SSE
G55	CHARTER STATION NO.	258 IYANOUGH RD	MA SHWS, MA LUST, MA RELEASE	Lower	3254, 0.616, SSE
56	AIRPORT MOTORS INC B	556 YARMOUTH RD	MA SHWS, MA LUST, MA RELEASE	Lower	3400, 0.644, East
57	WARDICK REALTY TRUST	143 OLD YARMOUTH RD	MA SHWS, MA RELEASE	Lower	3460, 0.655, SE
58	CANDLE COMPANY FMR B	24 PLANT RD	MA SHWS, MA RELEASE	Higher	3473, 0.658, West
H59	BP SERVICE STATION	230 IYANOUGH RD	MA SHWS, MA RELEASE	Lower	3474, 0.658, SSE
60	CYPRUS REALTY TRUST	157 AIRPORT RD	MA SHWS, MA RELEASE	Higher	3530, 0.669, WNW
I61	ROBIES REFRIGERATION	279 YARMOUTH RD	MA SHWS, MA RELEASE	Lower	3532, 0.669, SSE
62	BAP PROPERTY	47 OLD YARMOUTH RD	MA SHWS, MA RELEASE	Lower	3547, 0.672, SE
H63	MASS COASTAL RAILROA	215 IYANNOUGH RD	MA SHWS, MA RELEASE	Lower	3558, 0.674, SSE
I64	HYANNIS WATER TREATM	15 OLD YARMOUTH ROAD	MA SHWS, MA RELEASE, MA TIER 2	Lower	3578, 0.678, SE
65	SPARTAN CLEANERS	242 BARNSTABLE RD	RCRA-VSQG, MA SHWS, MA RELEASE, MA DRYCLEANERS, MA	Higher	3701, 0.701, SSW
66	CAPE DAIRY	44 BODICK RD	MA SHWS, MA RELEASE	Lower	3720, 0.705, SE
67	BUCKLERS TOWING SERV	116 RIDGEWOOD AVE	MA SHWS, MA RELEASE, MA HW GEN	Lower	3793, 0.718, South
68	NO LOCATION AID	296 WINTER ST	MA SHWS, MA LUST, MA RELEASE, MA UIC	Higher	3801, 0.720, SSW
69	BARBYANNS PUB	120 AIRPORT RD	MA SHWS, MA RELEASE	Higher	3802, 0.720, WNW
J70	GRANDPAS USED BIKES	210 YARMOUTH RD	MA SHWS, MA RELEASE	Lower	3950, 0.748, SSE
J71	MOBIL SERVICE STATIO	156 IYANOUGH RD	MA SHWS, MA LUST, MA RELEASE	Lower	3969, 0.752, SSE
J72	ROBERTS AUTO WHOLESA	202 YARMOUTH RD	MA SHWS, MA RELEASE, MA HW GEN	Lower	3978, 0.753, SSE
73	COMMERCIAL PROPERTY	95 AIRPORT ROAD	MA SHWS, MA RELEASE	Higher	4027, 0.763, WNW
74	MOBIL SERV STA	156 IYANOUGH RD	MA SHWS, MA RELEASE, MA SPILLS, MA HW GEN	Lower	4028, 0.763, SSE
75	NO LOCATION AID	381 CAMP ST	MA SHWS, MA RELEASE	Lower	4033, 0.764, SSE
76	NO LOCATION AID	252 HINCKLEY RD	MA SHWS, MA RELEASE	Higher	4129, 0.782, SW
K77	PACKAGING INDUSTRIES	70 AIRPORT RD	MA SHWS, MA RELEASE	Higher	4197, 0.795, West
K78	PACKAGING INDUSTRIAL	70-84 AIRPORT RD PLA	MA SHWS, MA RELEASE	Higher	4197, 0.795, West

MAPPED SITES SUMMARY

Target Property Address:
480 BARNSTABLE ROAD
HYANNIS, MA 02601

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
79	HYANNIS USO #19-112		FUDS	Lower	4224, 0.800, SSW
80	POLE 11/3	ATTUCKS LN	MA SHWS, MA RELEASE	Higher	4249, 0.805, WNW
81	UNDEVELOPED PROPERTY	114 IYANOUGH RD	MA SHWS, MA RELEASE	Lower	4322, 0.819, SSE
82	GARAGE	82 RIDGEWOOD AVE	MA SHWS, MA RELEASE	Lower	4462, 0.845, South
83	SEARS AUTOMOTIVE CEN	CPE COD MALL RTE 132	MA SHWS, MA LUST, MA RELEASE	Higher	4538, 0.859, West
84	FMR WILLOW ST SHELL-	381 CAMP ST	MA SHWS, MA RELEASE, MA UIC	Lower	4582, 0.868, ENE
L85	CAPE COD MALL PARKIN	RTE 132	MA SHWS, MA RELEASE, MA SPILLS	Higher	4684, 0.887, West
L86	BEHIND SEARS	RTE 132 CPE COD MALL	MA SHWS, MA RELEASE	Higher	4684, 0.887, West
M87	GETTY SERVICE STATIO	112 BARNSTABLE RD	MA SHWS, MA RELEASE, MA HW GEN, MA UIC	Lower	4762, 0.902, South
M88	BENS AUTO REPAIR BDP	5 CHARLES ST	MA SHWS, MA RELEASE	Lower	4813, 0.912, South
89	NO LOCATION AID	123 BARNSTABLE RD	MA SHWS, MA RELEASE, MA HW GEN	Lower	4908, 0.930, South
90	CORPORATION PLAZA	109 CORPORATION RD	MA SHWS, MA RELEASE, MA HW GEN	Higher	5047, 0.956, WSW
91	THE IRON HOUSE	95 CORPORATION RD	MA SHWS, MA RELEASE	Higher	5060, 0.958, WSW
92	FMR DOHERTY PROPERTI	70 CORPORATION ST	MA SHWS, MA RELEASE	Higher	5075, 0.961, WSW
93	THE CAPE COD CO	100 BREEDS HILL RD	MA SHWS, MA RELEASE, MA AIRS, MA HW GEN	Higher	5092, 0.964, NW
94	NEVADA BOB S BDP	30 CORPORATION RD	MA SHWS, MA LUST, MA RELEASE	Higher	5171, 0.979, WSW
95	ANCHOR AUTO BODY	7 CORPORATION RD	MA SHWS, MA RELEASE, MA HW GEN	Higher	5274, 0.999, WSW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
BARNSTABLE MUNICIPAL 480 BARNSTABLE RD HYANNIS, MA	MA RGA HWS Facility ID: 4-0021315 Facility ID: 4-0015600	N/A
BARNSTABLE MUNICIPAL 480 BANSTABLE RD., 2 BARNSTABLE, MA 02601	MA UIC	N/A
NO LOCATION AID 480 BARNSTABLE RD HYANNIS, MA	MA RGA HWS Facility ID: 4-0011841	N/A
140-008 LAWRENCE-LYN 480 BARNSTABLE RD HYANNIS, MA 02601	FINDS Registry ID:: 110071347392 Registry ID:: 110070056691 ECHO Registry ID: 110071347392	N/A
AIRPORT 480 BARNSTABLE RD HYANNIS, MA	MA RGA HWS Facility ID: 4-0014472	N/A
HERTZ CORP 480 BARNSTABLE RD BARNSTABLE-HYANNIS, MA 02601	FINDS Registry ID:: 110070120737 ECHO Registry ID: 110070120737	N/A
BARNSTABLE MUNICIPAL 480 BARNSTABLE RD BARNSTABLE-HYANNIS, MA 02601	NY MANIFEST EPA ID: MAC300009198	N/A
HERTZ CORP 480 BARNSTABLE RD BARNSTABLE-HYANNIS, MA 02601	RCRA-SQG EPA ID:: MAC300102878	MAC300102878
BARNSTABLE MUNICIPAL 480 BARNSTABLE RD BARNSTABLE-HYANNIS, MA 02601	RCRA-SQG EPA ID:: MAC300009198 RI MANIFEST	MAC300009198

EXECUTIVE SUMMARY

EPA Id: MAC300009198
Manifest Document Number: 003201468FLE

HERTZ COROPRATION
HERTZ CORP. 480 BARN
HYANNIS, MA 02601

MA TIER 2 — N/A
Facility Id: FATR20149265X0002H49
Facility Id: FATR20139265X0002H49
Facility Id: FATR20129265X0002H49

HERTZ CORP 1715-19
480 BARNSTABLE RD
HYANNIS, MA 02601

MA AST — N/A
Database: AST, Date of Government Version: 12/16/2022

NO LOCATION AID
480 BARNSTABLE ROAD
HYANNIS, MA

MA RGA HWS — N/A
Facility ID: 4-0011841

NO LOCATION AID
480 BARNSTABLE RD
HYANNIS, MA 02601

MA SHWS — N/A
Release Tracking Number: 4-0026347
Release Tracking Number: 4-0021315
Release Tracking Number: 4-0011841
Release Tracking Number: 4-0015600
Release Tracking Number: 4-0014472
**Additional key fields are available in the Map Findings section*
Current Status: TIERI
Current Status: RAO
Current Status: RAONR
Current Status: PSNC

MA LUST
Release Tracking Number / Current Status: 4-0026358 / PSNC

MA AST
Database: AST, Date of Government Version: 12/16/2022
Database: AST 2, Date of Government Version: 01/09/2023

MA RELEASE
Release Tracking Number / Current Status: 4-0011841 / RAONR
Release Tracking Number / Current Status: 4-0014472 / RAO
Release Tracking Number / Current Status: 4-0015600 / RAO
Release Tracking Number / Current Status: 4-0021315 / RAO
Release Tracking Number / Current Status: 4-0026225 / PSNC
**Additional key fields are available in the Map Findings section*

MA HW GEN
State Generator Status: SQG-MA
EPA Id: MAC300102878
EPA Id: MAC300009198

MA TIER 2
Facility Id: FATR2018000000041388
Facility Id: FATR2017000000036142

	Facility Id: FATR2015000000009553 Facility Id: FATR2015000000009550 Facility Id: FATR2016000000026792 **Additional key fields are available in the Map Findings section*	
BARNSTABLE MUNICIPAL 480 BARNSTABLE RD BARNSTABLE, MA 02601	MA SHWS Release Tracking Number: 4-0028577 Current Status: TIERII MA UST Tank Status: Tank Removed Tank Status: Tank Closure In-Plac Facility Id: 1114 MA RELEASE Release Tracking Number / Current Status: 4-0028577 / TIERII MA ASBESTOS MA Financial Assurance Database: Financial Assurance 2, Date of Government Version: 03/08/2023	N/A
BARNSTABLE MUNICIPAL 480 BARNSTABLE ROAD HYANNIS, MA 02601	MA TIER 2 Facility Id: FATR20134XR8MH002W48 Facility Id: FATR20114XR8MH002W48 Facility Id: FATR2019000000043202 Facility Id: FATR2018000000041232 Facility Id: FATR2017000000035452 **Additional key fields are available in the Map Findings section*	N/A
THE HERTZ CORPORATIO 480 BARNSTABLE RD HYANNIS, MA 02601	MA TIER 2 Facility Id: FATR20115NB19G0021H0	N/A
480 BARNSTABLE RD 480 BARNSTABLE RD HYANNIS, MA	ERNS Incident Date Time: 2000-07-15 05:00:00 NRC Report #: 535475	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL ---------- National Priority List

Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL ---------- National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS ---------- Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-LQG ---------- RCRA - Large Quantity Generators

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROLS ---------- Institutional Controls Sites List

Lists of state and tribal landfills and solid waste disposal facilities

MA SWF/LF ---------- Solid Waste Facility Database/Transfer Stations

Lists of state and tribal leaking storage tanks

INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

Lists of state and tribal registered storage tanks

FEMA UST ---------- Underground Storage Tank Listing
INDIAN UST ---------- Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

MA INST CONTROL ---------- Sites With Activity and Use Limitation

Lists of state and tribal voluntary cleanup sites

INDIAN VCP ---------- Voluntary Cleanup Priority Listing

Lists of state and tribal brownfield sites

MA BROWNFIELDS ---------- Completed Brownfields Covenants Listing

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands
ODI ---------- Open Dump Inventory
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ---------- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---------- Delisted National Clandestine Laboratory Register
US CDL ---------- National Clandestine Laboratory Register

Local Land Records

MA LIENS ---------- Liens Information Listing
LIENS 2 ---------- CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ---------- Hazardous Materials Information Reporting System
MA SPILLS 90 ---------- SPILLS 90 data from FirstSearch
MA SPILLS 80 ---------- SPILLS 80 data from FirstSearch

Other Ascertainable Records

DOD ---------- Department of Defense Sites
SCRD DRYCLEANERS ---------- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---------- Financial Assurance Information
EPA WATCH LIST ---------- EPA WATCH LIST
2020 COR ACTION ---------- 2020 Corrective Action Program List
TSCA ---------- Toxic Substances Control Act
TRIS ---------- Toxic Chemical Release Inventory System
SSTS ---------- Section 7 Tracking Systems
ROD ---------- Records Of Decision
RMP ---------- Risk Management Plans
RAATS ---------- RCRA Administrative Action Tracking System
PRP ---------- Potentially Responsible Parties
PADS ---------- PCB Activity Database System
ICIS ---------- Integrated Compliance Information System
FTTS ---------- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---------- Material Licensing Tracking System
COAL ASH DOE ---------- Steam-Electric Plant Operation Data
COAL ASH EPA ---------- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---------- PCB Transformer Registration Database
RADINFO ---------- Radiation Information Database
HIST FTTS ---------- FIFRA/TSCA Tracking System Administrative Case Listing

DOT OPS ---- Incident and Accident Data
CONSENT ---- Superfund (CERCLA) Consent Decrees
INDIAN RESERV ---- Indian Reservations
FUSRAP ---- Formerly Utilized Sites Remedial Action Program
UMTRA ---- Uranium Mill Tailings Sites
LEAD SMELTERS ---- Lead Smelter Sites
US AIRS ---- Aerometric Information Retrieval System Facility Subsystem
US MINES ---- Mines Master Index File
ABANDONED MINES ---- Abandoned Mines
DOCKET HWC ---- Hazardous Waste Compliance Docket Listing
UXO ---- Unexploded Ordnance Sites
FUELS PROGRAM ---- EPA Fuels Program Registered Listing
PFAS NPL ---- Superfund Sites with PFAS Detections Information
PFAS FEDERAL SITES ---- Federal Sites PFAS Information
PFAS TSCA ---- PFAS Manufacture and Imports Information
PFAS RCRA MANIFEST ---- PFAS Transfers Identified In the RCRA Database Listing
PFAS ATSDR ---- PFAS Contamination Site Location Listing
PFAS WQP ---- Ambient Environmental Sampling for PFAS
PFAS NPDES ---- Clean Water Act Discharge Monitoring Information
PFAS ECHO ---- Facilities in Industries that May Be Handling PFAS Listing
PFAS ECHO FIRE TRAINING ---- Facilities in Industries that May Be Handling PFAS Listing
AQUEOUS FOAM NRC ---- Aqueous Foam Related Incidents Listing
MA PFAS ---- PFAS Contaminated Sites Listing
MA ENF ---- Enforcement Action Cases
MA GWDP ---- Ground Water Discharge Permits
MA MERCURY ---- Mercury Product Recyling Drop-Off Locations Listing
MA NPDES ---- NPDES Permit Listing
MA TSD ---- TSD Facility
PFAS TRIS ---- List of PFAS Added to the TRI
MINES MRDS ---- Mineral Resources Data System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP ---- EDR Proprietary Manufactured Gas Plants
EDR Hist Auto ---- EDR Exclusive Historical Auto Stations
EDR Hist Cleaner ---- EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

MA RGA LUST ---- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

Lists of state- and tribal hazardous waste facilities

MA SHWS: Contains information on releases of oil and hazardous materials that have been reported to DEP.

A review of the MA SHWS list, as provided by EDR, and dated 04/05/2023 has revealed that there are 67 MA SHWS sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BARNSTABLE AIRPORT Release Tracking Number: 4-0000823 Current Status: PSNC	***BOARDMAN-POLANDO FLD***	***S 1/8 - 1/4 (0.156 mi.)***	***24***	***103***
NEAR END OF MARY DUN Release Tracking Number: 4-0011270 Current Status: RAO	***6 AIRPORT WAY (REAR)***	***NE 1/8 - 1/4 (0.192 mi.)***	***C25***	***112***
CAPE FLIGHT Release Tracking Number: 4-0015715 Current Status: RAO	***110 MARY DUNN RD***	***NE 1/8 - 1/4 (0.211 mi.)***	***C27***	***116***
HYANNIS AIRPORT Release Tracking Number: 4-0023484 Current Status: RAO	***490 BARNSTABLE ROAD***	***SW 1/4 - 1/2 (0.396 mi.)***	***28***	***120***
MOTOR VEHICLE GARAGE Release Tracking Number: 4-0010187 Current Status: RAO	***16 HINKLEY RD***	***WSW 1/4 - 1/2 (0.399 mi.)***	***29***	***121***
BAP AIRPORT HANGER I Release Tracking Number: 4-0012048 Current Status: RAONR	***BOARDMAN-POLANDO FLD***	***SE 1/4 - 1/2 (0.466 mi.)***	***E32***	***128***
BARNSTABLE MUNICIPAL Release Tracking Number: 4-0012687 Current Status: RAONR	***EAST RAMP***	***SE 1/4 - 1/2 (0.466 mi.)***	***E33***	***130***
SHELL SERVICE STA Release Tracking Number: 4-0017651 Current Status: RAO	***590 IYANOUGH RD***	***WSW 1/4 - 1/2 (0.477 mi.)***	***D34***	***132***
SHELL STATION #13777 Release Tracking Number: 4-0018156 Current Status: RAO	***590 IYANNOUGH RD***	***WSW 1/4 - 1/2 (0.477 mi.)***	***D35***	***139***
POLE DOWN -TRANSFORM Release Tracking Number: 4-0024153 Current Status: RAO	***395 BARNSTABLE ROAD***	***SSW 1/4 - 1/2 (0.485 mi.)***	***36***	***140***
BOUY S REALTY BDP Release Tracking Number: 4-0000461 Current Status: DEPNDS	***599 IYANOUGH RD***	***WSW 1/4 - 1/2 (0.492 mi.)***	***37***	***142***
CAPE FLIGHT AREA Release Tracking Number: 4-0014860 Current Status: RAO	***BARNSTABLE MUNICIPAL***	***W 1/2 - 1 (0.503 mi.)***	***F38***	***143***
GRIFFIN AVIONICS Release Tracking Number: 4-0012911	***BARNSTABLE AIRPORT***	***W 1/2 - 1 (0.503 mi.)***	***F39***	***144***

Current Status: RAONR				
HYANNIS AIRPORT	***125 MARY DUNN WAY***	***SSE 1/2 - 1 (0.514 mi.)***	***40***	***146***
Release Tracking Number: 4-0028769 Current Status: PSNC				
TRANSATLANTIC MOTORS	***25 FALMOUTH RD***	***SW 1/2 - 1 (0.514 mi.)***	***41***	***147***
Release Tracking Number: 4-0013433 Current Status: RAO				
RAY BLACKBURN AUTO S	***AIRPORT RD***	***WNW 1/2 - 1 (0.551 mi.)***	***42***	***150***
Release Tracking Number: 4-0001081 Current Status: RAO				
CHRISTMAS TREE SHOP/	***655 IYANOUGH ROAD (R***	***WSW 1/2 - 1 (0.557 mi.)***	***43***	***153***
Release Tracking Number: 4-0026340 Current Status: PSNC				
BARNSTABLE FIRE TRAI	***MARY DUNN RD***	***NNW 1/2 - 1 (0.573 mi.)***	***44***	***155***
Release Tracking Number: 4-0020021 Current Status: RAONR				
REAR ALLEY	***360 BARNSTABLE ROAD***	***SSW 1/2 - 1 (0.579 mi.)***	***45***	***157***
Release Tracking Number: 4-0027674 Current Status: PSNC				
ABCO RENTAL CENTER I	***181 SPRING ST***	***S 1/2 - 1 (0.582 mi.)***	***46***	***158***
Release Tracking Number: 4-0014306 Current Status: RAO				
BARNSTABLE GETTY STA	***BARNSTABLE RD***	***SSW 1/2 - 1 (0.605 mi.)***	***50***	***172***
Release Tracking Number: 4-0000706 Current Status: LSPNFA				
CAPE COD COMMERCIAL	***LEWIS ROAD AT BAXTER***	***SSW 1/2 - 1 (0.611 mi.)***	***51***	***173***
Release Tracking Number: 4-0021245 Current Status: RAO				
CANDLE COMPANY FMR B	***24 PLANT RD***	***W 1/2 - 1 (0.658 mi.)***	***58***	***224***
Release Tracking Number: 4-0000435 Current Status: LSPNFA				
CYPRUS REALTY TRUST	***157 AIRPORT RD***	***WNW 1/2 - 1 (0.669 mi.)***	***60***	***228***
Release Tracking Number: 4-0000368 Current Status: DEPNDS				
SPARTAN CLEANERS	***242 BARNSTABLE RD***	***SSW 1/2 - 1 (0.701 mi.)***	***65***	***236***
Release Tracking Number: 4-0025162 Release Tracking Number: 4-0024672 Current Status: RAONR Current Status: PSNC				
NO LOCATION AID	***296 WINTER ST***	***SSW 1/2 - 1 (0.720 mi.)***	***68***	***248***
Release Tracking Number: 4-0018675 Current Status: PSNC				
BARBYANNS PUB	***120 AIRPORT RD***	***WNW 1/2 - 1 (0.720 mi.)***	***69***	***261***
Release Tracking Number: 4-0026692 Current Status: PSNC				
COMMERCIAL PROPERTY	***95 AIRPORT ROAD***	***WNW 1/2 - 1 (0.763 mi.)***	***73***	***279***
Release Tracking Number: 4-0028856 Current Status: DPS				
NO LOCATION AID	***252 HINCKLEY RD***	***SW 1/2 - 1 (0.782 mi.)***	***76***	***285***

Release Tracking Number: 4-0016090
Current Status: RAO

PACKAGING INDUSTRIES Release Tracking Number: 4-0011988 Current Status: RAO	***70 AIRPORT RD***	***W 1/2 - 1 (0.795 mi.)***	***K77***	***287***
PACKAGING INDUSTRIAL Release Tracking Number: 4-0001080 Current Status: RAO	***70-84 AIRPORT RD PLA***	***W 1/2 - 1 (0.795 mi.)***	***K78***	***289***
POLE 11/3 Release Tracking Number: 4-0020777 Current Status: RAO	***ATTUCKS LN***	***WNW 1/2 - 1 (0.805 mi.)***	***80***	***292***
SEARS AUTOMOTIVE CEN Release Tracking Number: 4-0000899 Current Status: PSNC	***CPE COD MALL RTE 132***	***W 1/2 - 1 (0.859 mi.)***	***83***	***297***
CAPE COD MALL PARKIN Release Tracking Number: 4-0014312 Release Tracking Number: 4-0016505 Current Status: RAO	***RTE 132***	***W 1/2 - 1 (0.887 mi.)***	***L85***	***313***
BEHIND SEARS Release Tracking Number: 4-0014747 Current Status: RAO	***RTE 132 CPE COD MALL***	***W 1/2 - 1 (0.887 mi.)***	***L86***	***316***
CORPORATION PLAZA Release Tracking Number: 4-0000890 Current Status: RAO	***109 CORPORATION RD***	***WSW 1/2 - 1 (0.956 mi.)***	***90***	***324***
THE IRON HOUSE Release Tracking Number: 4-0020088 Current Status: RAO	***95 CORPORATION RD***	***WSW 1/2 - 1 (0.958 mi.)***	***91***	***327***
FMR DOHERTY PROPERTI Release Tracking Number: 4-0025479 Current Status: DPS	***70 CORPORATION ST***	***WSW 1/2 - 1 (0.961 mi.)***	***92***	***329***
THE CAPE COD CO Release Tracking Number: 4-0000937 Current Status: RAO	***100 BREEDS HILL RD***	***NW 1/2 - 1 (0.964 mi.)***	***93***	***330***
NEVADA BOB S BDP Release Tracking Number: 4-0000782 Current Status: DEPNFA	***30 CORPORATION RD***	***WSW 1/2 - 1 (0.979 mi.)***	***94***	***409***
ANCHOR AUTO BODY Release Tracking Number: 4-0014148 Current Status: RAO	***7 CORPORATION RD***	***WSW 1/2 - 1 (0.999 mi.)***	***95***	***411***

Lower Elevation	Address	Direction / Distance	Map ID	Page
BARNSTABLE COUNTY FI Release Tracking Number: 4-0000190 Current Status: RAO	***MARY DUNN RD***	***NNW 1/2 - 1 (0.590 mi.)***	***47***	***160***
PURITAN PONTIAC BDP Release Tracking Number: 4-0000251 Current Status: DEPNFA	***460 YARMOUTH RD***	***ESE 1/2 - 1 (0.603 mi.)***	***49***	***171***
IN FRONT OF BALISE H Release Tracking Number: 4-0026164	***519 YARMOUTH ROAD***	***ESE 1/2 - 1 (0.612 mi.)***	***52***	***175***

Current Status: PSNC				
ATWOOD OIL (HUBBARD	***33 BROOKS RD***	***SSE 1/2 - 1 (0.613 mi.)***	***53***	***177***
Release Tracking Number: 4-0015370 Current Status: RAONR				
URAM	***258 IYANNOUGH ROAD***	***SSE 1/2 - 1 (0.616 mi.)***	***G54***	***189***
Release Tracking Number: 4-0029244 Current Status: URAM				
CHARTER STATION NO.	***258 IYANOUGH RD***	***SSE 1/2 - 1 (0.616 mi.)***	***G55***	***192***
Release Tracking Number: 4-0000026 Current Status: RAO				
AIRPORT MOTORS INC B	***556 YARMOUTH RD***	***E 1/2 - 1 (0.644 mi.)***	***56***	***209***
Release Tracking Number: 4-0023065 Current Status: RAO				
WARDICK REALTY TRUST	***143 OLD YARMOUTH RD***	***SE 1/2 - 1 (0.655 mi.)***	***57***	***222***
Release Tracking Number: 4-0000991 Release Tracking Number: 4-0016335 Current Status: DEPNDS Current Status: RAO				
BP SERVICE STATION	***230 IYANOUGH RD***	***SSE 1/2 - 1 (0.658 mi.)***	***H59***	***225***
Release Tracking Number: 4-0000392 Current Status: RAONR				
ROBIES REFRIGERATION	***279 YARMOUTH RD***	***SSE 1/2 - 1 (0.669 mi.)***	***I61***	***229***
Release Tracking Number: 4-0000934 Current Status: RAO				
BAP PROPERTY	***47 OLD YARMOUTH RD***	***SE 1/2 - 1 (0.672 mi.)***	***62***	***231***
Release Tracking Number: 4-0000976 Current Status: DEPNFA				
MASS COASTAL RAILROA	***215 IYANNOUGH RD***	***SSE 1/2 - 1 (0.674 mi.)***	***H63***	***232***
Release Tracking Number: 4-0025408 Current Status: PSC				
HYANNIS WATER TREATM	***15 OLD YARMOUTH ROAD***	***SE 1/2 - 1 (0.678 mi.)***	***I64***	***234***
Release Tracking Number: 4-0025602 Current Status: PSNC				
CAPE DAIRY	***44 BODICK RD***	***SE 1/2 - 1 (0.705 mi.)***	***66***	***244***
Release Tracking Number: 4-0010059 Current Status: RAO				
BUCKLERS TOWING SERV	***116 RIDGEWOOD AVE***	***S 1/2 - 1 (0.718 mi.)***	***67***	***246***
Release Tracking Number: 4-0023016 Current Status: RAO				
GRANDPAS USED BIKES	***210 YARMOUTH RD***	***SSE 1/2 - 1 (0.748 mi.)***	***J70***	***262***
Release Tracking Number: 4-0013201 Current Status: DPS				
MOBIL SERVICE STATIO	***156 IYANOUGH RD***	***SSE 1/2 - 1 (0.752 mi.)***	***J71***	***264***
Release Tracking Number: 4-0013422 Release Tracking Number: 4-0015997 Release Tracking Number: 4-0018891 Current Status: RAO Current Status: RAONR				
ROBERTS AUTO WHOLESA	***202 YARMOUTH RD***	***SSE 1/2 - 1 (0.753 mi.)***	***J72***	***278***

Release Tracking Number: 4-0013202 Current Status: DPS				
MOBIL SERV STA Release Tracking Number: 4-0011972 Current Status: RAO	***156 IYANOUGH RD***	***SSE 1/2 - 1 (0.763 mi.)***	***74***	***281***
NO LOCATION AID Release Tracking Number: 4-0014213 Current Status: RAONR	***381 CAMP ST***	***SSE 1/2 - 1 (0.764 mi.)***	***75***	***283***
UNDEVELOPED PROPERTY Release Tracking Number: 4-0019452 Current Status: DPS	***114 IYANOUGH RD***	***SSE 1/2 - 1 (0.819 mi.)***	***81***	***293***
GARAGE Release Tracking Number: 4-0014264 Current Status: DEPNFA	***82 RIDGEWOOD AVE***	***S 1/2 - 1 (0.845 mi.)***	***82***	***295***
FMR WILLOW ST SHELL- Release Tracking Number: 4-0001179 Current Status: REMOPS	***381 CAMP ST***	***ENE 1/2 - 1 (0.868 mi.)***	***84***	***300***
GETTY SERVICE STATIO Release Tracking Number: 4-0014059 Release Tracking Number: 4-0014685 Current Status: RAO	***112 BARNSTABLE RD***	***S 1/2 - 1 (0.902 mi.)***	***M87***	***318***
BENS AUTO REPAIR BDP Release Tracking Number: 4-0000383 Current Status: DEPNFA	***5 CHARLES ST***	***S 1/2 - 1 (0.912 mi.)***	***M88***	***322***
NO LOCATION AID Release Tracking Number: 4-0018174 Current Status: RAO	***123 BARNSTABLE RD***	***S 1/2 - 1 (0.930 mi.)***	***89***	***323***

Lists of state and tribal leaking storage tanks

MA LUST: Sites within the Releases Database that have a UST listed as its source.

A review of the MA LUST list, as provided by EDR, and dated 04/05/2023 has revealed that there are 2 MA LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SHELL STATION Release Tracking Number / Current Status: 4-0010573 / RAO	***AIRPORT ROTARY***	***WSW 1/4 - 1/2 (0.463 mi.)***	***D31***	***126***
SHELL SERVICE STA Release Tracking Number / Current Status: 4-0000793 / RAO	***590 IYANOUGH RD***	***WSW 1/4 - 1/2 (0.477 mi.)***	***D34***	***132***

MA LAST: The Leaking Aboveground Storage Tanks database

A review of the MA LAST list, as provided by EDR, and dated 04/05/2023 has revealed that there are 2 MA LAST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CAPE FLIGHT	***110 MARY DUNN RD***	***NE 1/8 - 1/4 (0.211 mi.)***	***C27***	***116***

Release Tracking Number / Current Status: 4-0015715 / RAO

Lower Elevation	Address	Direction / Distance	Map ID	Page
BARNSTABLE WATER TRE	***656 MARY DUNNE ROAD***	***NNE 1/4 - 1/2 (0.428 mi.)***	***30***	***123***

Release Tracking Number / Current Status: 4-0022824 / RAO

Lists of state and tribal registered storage tanks

MA UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Protection's Summary Listing of all the Tanks Registered in the State of Massachusetts.

A review of the MA UST list, as provided by EDR, and dated 03/08/2023 has revealed that there is 1 MA UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
RUSTY'S INC Tank Status: Tank Removed Facility Id: 40814	55 MARY DUNN RD	NE 1/8 - 1/4 (0.205 mi.)	C26	114

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/06/2023 has revealed that there are 5 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
HANGAR 2 INC EPA ID:: MAD982546244	BARNSTABLE MUNICIPAL	W 0 - 1/8 (0.056 mi.)	B18	90
HYANNIS AIR SERVICE EPA ID:: MAD069264125	BARNSTABLE MUNICIPAL	W 0 - 1/8 (0.056 mi.)	B19	93
GULL ARI INC EPA ID:: MAD076618040	BARNSTABLE MUNICIPAL	W 0 - 1/8 (0.056 mi.)	B20	95
PROVINCETOWN BOSTON EPA ID:: MAD981211253	MUNICIPAL ARPT NORTH	W 0 - 1/8 (0.057 mi.)	B21	98
TRI AIR FREIGHT INC EPA ID:: MAD981211626	BARNSTABLE ARPT	WSW 0 - 1/8 (0.063 mi.)	B22	100

EXECUTIVE SUMMARY

FUDS: The Listing includes locations of Formerly Used Defense Sites Properties where the US Army Corps Of Engineers is actively working or will take necessary cleanup actions.

A review of the FUDS list, as provided by EDR, and dated 02/01/2023 has revealed that there are 2 FUDS sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
NAV AUX AIR FACILITY		ENE 1/2 - 1 (0.600 mi.)	48	170
HYANNIS USO #19-112		SSW 1/2 - 1 (0.800 mi.)	79	291

PFAS PART 139 AIRPORT: Since July 1, 2006, all certified part 139 airports are required to have fire-fighting foam onsite that meet military specifications (MIL-F-24385) (14 CFR 139.317). To date, these military specification fire-fighting foams are fluorinated and have been historically used for training and extinguishing. The 2018 FAA Reauthorization Act has a provision stating that no later than October 2021, FAA shall not require the use of fluorinated AFFF. This provision does not prohibit the use of fluorinated AFFF at Part 139 civilian airports; it only prohibits FAA from mandating its use. The Federal Aviation Administration?s document AC 150/5210-6D - Aircraft Fire Extinguishing Agents provides guidance on Aircraft Fire Extinguishing Agents, which includes Aqueous Film Forming Foam (AFFF).

A review of the PFAS PART 139 AIRPORT list, as provided by EDR, and dated 03/30/2023 has revealed that there is 1 PFAS PART 139 AIRPORT site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HYA - CAPE COD GATEW		ESE 0 - 1/8 (0.089 mi.)	23	102

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 7 records.

Site Name	Database(s)
BARNSTABLE D.P.W.	PRP
TRANSFORMER VAULT	MA SHWS, MA RELEASE
COSTA RESIDENCE	MA SHWS, MA RELEASE
BARNSTABLE RD	MA SHWS, MA RELEASE
D'OLIMIPIO REAL ESTATE	MA SHWS, MA RELEASE
ROADWAY RELEASE	MA SHWS, MA RELEASE
SUNOCO GAS STA	MA LUST, MA RELEASE

OVERVIEW MAP - 7379392.2S

0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Critical Environmental Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Cape Cod Gateway Airport	CLIENT:	GEI Consultants, Inc.
ADDRESS:	480 Barnstable Road Hyannis MA 02601	CONTACT:	Christopher M Ragnelli
LAT/LONG:	41.669965 / 70.281853	INQUIRY #:	7379392.2s
		DATE:	June 30, 2023 3:51 pm

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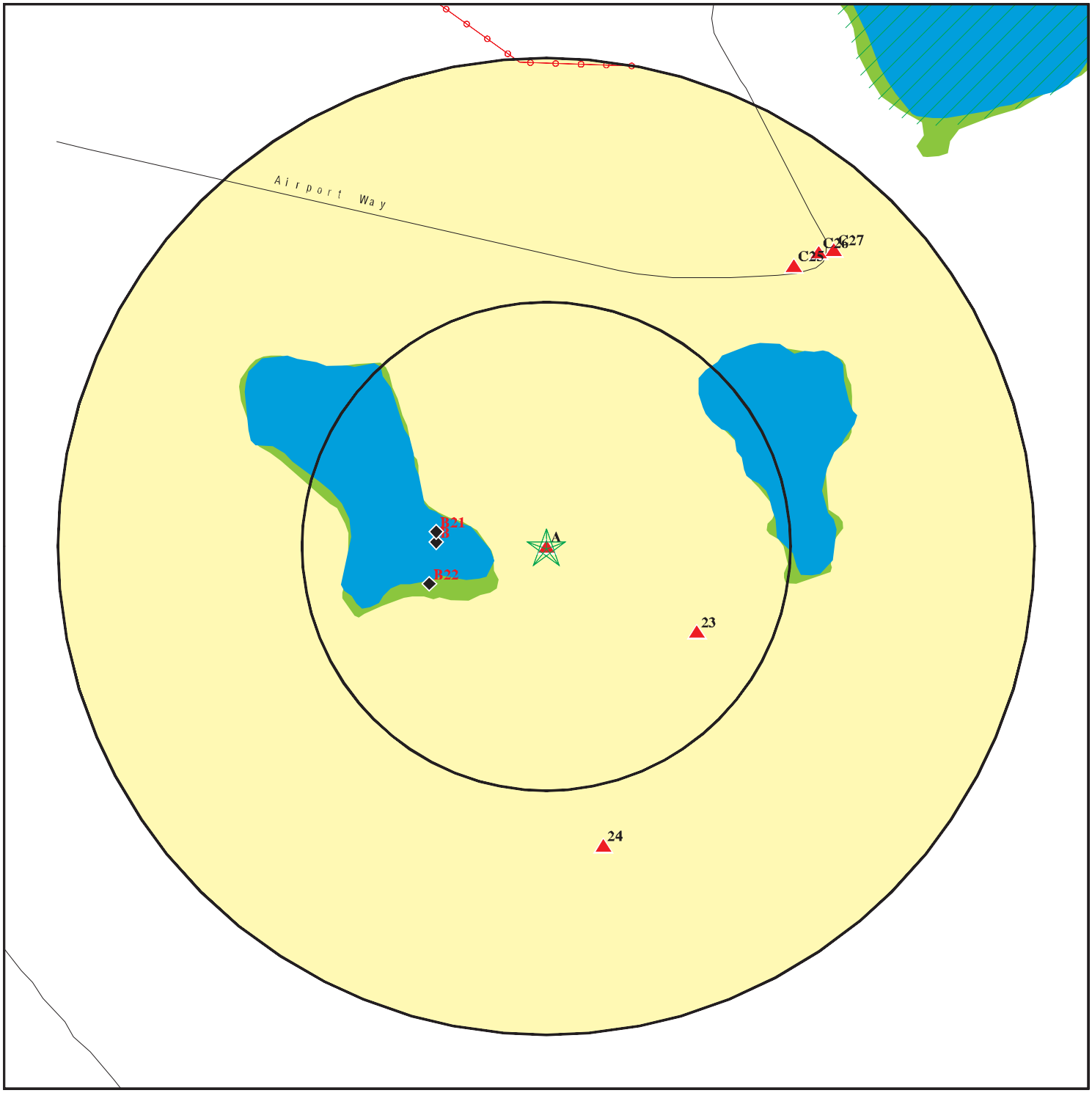
DETAIL MAP - 7379392.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/16 1/8 1/4 Miles

- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Critical Environmental Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

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LAT/LONG:	41.669965 / 70.281853	INQUIRY #:	7379392.2s
		DATE:	June 30, 2023 3:53 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Lists of Federal NPL (Superfund) sites								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	0	NR	0
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250	2	0	0	NR	NR	NR	2
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP	1	NR	NR	NR	NR	NR	1
Lists of state- and tribal hazardous waste facilities								
MA SHWS	1.000	2	0	3	8	56	NR	69
Lists of state and tribal landfills and solid waste disposal facilities								
MA SWF/LF	0.500		0	0	0	NR	NR	0
Lists of state and tribal leaking storage tanks								
MA LUST	0.500	1	0	0	2	NR	NR	3

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MA LAST	0.500		0	1	1	NR	NR	2
INDIAN LUST	0.500		0	0	0	NR	NR	0
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
MA UST	0.250	1	0	1	NR	NR	NR	2
MA AST	0.250	2	0	0	NR	NR	NR	2
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
MA INST CONTROL	0.500		0	0	0	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
Lists of state and tribal brownfield sites								
MA BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Land Records								
MA LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
MA RELEASE	TP	2	NR	NR	NR	NR	NR	2
MA SPILLS	TP		NR	NR	NR	NR	NR	0
MA SPILLS 90	TP		NR	NR	NR	NR	NR	0
MA SPILLS 80	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		5	0	NR	NR	NR	5
FUDS	1.000		0	0	0	2	NR	2

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP	2	NR	NR	NR	NR	NR	2
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
ECHO	TP	2	NR	NR	NR	NR	NR	2
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
PFAS NPL	0.250		0	0	NR	NR	NR	0
PFAS FEDERAL SITES	0.250		0	0	NR	NR	NR	0
PFAS TSCA	0.250		0	0	NR	NR	NR	0
PFAS RCRA MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS ATSDR	0.250		0	0	NR	NR	NR	0
PFAS WQP	0.250		0	0	NR	NR	NR	0
PFAS NPDES	0.250		0	0	NR	NR	NR	0
PFAS ECHO	0.250		0	0	NR	NR	NR	0
PFAS ECHO FIRE TRAINING	0.250		0	0	NR	NR	NR	0
PFAS PART 139 AIRPORT	0.250		1	0	NR	NR	NR	1
AQUEOUS FOAM NRC	0.250		0	0	NR	NR	NR	0
MA PFAS	0.250		0	0	NR	NR	NR	0
MA AIRS	TP		NR	NR	NR	NR	NR	0
MA ASBESTOS	TP	1	NR	NR	NR	NR	NR	1
MA DRYCLEANERS	0.250		0	0	NR	NR	NR	0
MA ENF	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MA Financial Assurance	TP	1	NR	NR	NR	NR	NR	1
MA GWDP	TP		NR	NR	NR	NR	NR	0
MA HW GEN	0.250	1	0	0	NR	NR	NR	1
RI MANIFEST	0.250	1	0	0	NR	NR	NR	1
NY MANIFEST	0.250	1	0	0	NR	NR	NR	1
MA MERCURY	0.500		0	0	0	NR	NR	0
MA NPDES	TP		NR	NR	NR	NR	NR	0
MA TIER 2	TP	4	NR	NR	NR	NR	NR	4
MA TSD	0.500		0	0	0	NR	NR	0
MA UIC	TP	1	NR	NR	NR	NR	NR	1
PFAS TRIS	0.250		0	0	NR	NR	NR	0
MINES MRDS	0.250		0	0	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
MA RGA HWS	TP	4	NR	NR	NR	NR	NR	4
MA RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		29	6	5	11	58	0	109

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **BARNSTABLE MUNICIPAL AIRPORT** **MA RGA HWS** **S115012895**
Target **480 BARNSTABLE RD** **N/A**
Property **HYANNIS, MA**

Site 1 of 17 in cluster A

Actual: **40 ft.**

RGA HWS:

2012	BARNSTABLE MUNICIPAL AIRPORT	480 BARNSTABLE RD
2012	BARNSTABLE MUNICIPAL AIRPORT	480 BARNSTABLE RD
2011	BARNSTABLE MUNICIPAL AIRPORT	480 BARNSTABLE RD
2010	BARNSTABLE MUNICIPAL AIRPORT	480 BARNSTABLE RD
2009	BARNSTABLE MUNICIPAL AIRPORT	480 BARNSTABLE RD
2008	BARNSTABLE MUNICIPAL AIRPORT	480 BARNSTABLE RD

A2 **BARNSTABLE MUNICIPAL AIRPORT** **MA UIC** **S129311771**
Target **480 BANSTABLE RD., 2ND FL** **N/A**
Property **BARNSTABLE, MA 02601**

Site 2 of 17 in cluster A

Actual: **40 ft.**

UIC:

RTN Number:	Not reported
Name:	BARNSTABLE MUNICIPAL AIRPORT
Address:	480 BANSTABLE RD., 2ND FL
City,State,Zip:	BARNSTABLE, MA 02601
Permit Date:	Not reported
Actor Name:	Not reported
Air Sparging:	Not reported
Injection Well:	Not reported
ReInjection Well:	Not reported
UIC APL Type:	WS-06d
Latitude:	Not reported
Well Status:	Not reported
Longitude:	Not reported
UIC ID:	Not reported
EPA Code:	Not reported
Indicates Area:	Not reported
Number of Wells:	Not reported
Owner:	BARNSTABLE MUN. AIRPORT
Receive Date:	Not reported
Authorization to Install/Close Date:	Not reported
Confirmation of Install Receive:	Not reported
Post-Closure Receive:	05/29/1996
Final Approval Date:	Not reported
Permit Number:	Not reported
Permit Type:	Not reported
Permit Type Description:	Not reported
Program:	Not reported
Applicant Name:	Not reported
Decision Date:	Not reported
Operator Name:	Not reported
Well ID:	Not reported
Well Type Name:	Not reported
Max Well Depth:	Not reported
Date Complete:	Not reported
Work Performed:	Not reported
Depth to Bedrock:	Not reported
Water Level:	Not reported

A3 **NO LOCATION AID** **MA RGA HWS** **S115036843**
Target **480 BARNSTABLE RD** **N/A**
Property **HYANNIS, MA**

Site 3 of 17 in cluster A

Actual: **40 ft.**

RGA HWS:

2012	NO LOCATION AID	480 BARNSTABLE RD
2011	NO LOCATION AID	480 BARNSTABLE RD
2010	NO LOCATION AID	480 BARNSTABLE RD
2009	NO LOCATION AID	480 BARNSTABLE RD
2008	NO LOCATION AID	480 BARNSTABLE RD
2007	NO LOCATION AID	480 BARNSTABLE RD
2006	NO LOCATION AID	480 BARNSTABLE RD
2005	NO LOCATION AID	480 BARNSTABLE RD
2004	NO LOCATION AID	480 BARNSTABLE RD
2003	NO LOCATION AID	480 BARNSTABLE RD
2002	NO LOCATION AID	480 BARNSTABLE RD

A4 **140-008 LAWRENCE-LYNCH: HYANNIS, MA - RUNWAY 6-24** **FINDS** **1023647422**
Target **480 BARNSTABLE RD** **ECHO** **N/A**
Property **HYANNIS, MA 02601**

Site 4 of 17 in cluster A

Actual: **40 ft.**

FINDS:
Registry ID: 110071347392

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.
Registry ID: 110070056691

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
MA-EPICS - Massachussetts Environmental Protection Integrated Computer System

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1023647422
Registry ID:	110071347392
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110071347392
Name:	140-008 LAWRENCE-LYNCH: HYANNIS, MA - RUNWAY 6-24 RECONSTRUCTION
Address:	480 BARNSTABLE RD
City,State,Zip:	HYANNIS, MA 02601

A5 **AIRPORT** **MA RGA HWS** **S115011223**
Target Property **480 BARNSTABLE RD** **N/A**
HYANNIS, MA

Site 5 of 17 in cluster A

Actual: 40 ft.

RGA HWS:

2012	AIRPORT	480 BARNSTABLE RD
2011	AIRPORT	480 BARNSTABLE RD
2010	AIRPORT	480 BARNSTABLE RD
2009	AIRPORT	480 BARNSTABLE RD
2008	AIRPORT	480 BARNSTABLE RD
2007	AIRPORT	480 BARNSTABLE RD
2006	AIRPORT	480 BARNSTABLE RD
2005	AIRPORT	480 BARNSTABLE RD
2004	AIRPORT	480 BARNSTABLE RD
2003	AIRPORT	480 BARNSTABLE RD
2002	AIRPORT	480 BARNSTABLE RD

A6 **HERTZ CORP** **FINDS** **1023709387**
Target Property **480 BARNSTABLE RD** **ECHO** **N/A**
BARNSTABLE-HYANNIS, MA 02601

Site 6 of 17 in cluster A

Actual: 40 ft.

FINDS:
Registry ID: 110070120737

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1023709387
Registry ID:	110070120737
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110070120737
Name:	HERTZ CORP
Address:	480 BARNSTABLE RD
City,State,Zip:	BARNSTABLE-HYANNIS, MA 02601

A7 **BARNSTABLE MUNICIPAL AIRPORT** **NY MANIFEST** **S119069526**
Target Property **480 BARNSTABLE RD** **N/A**
BARNSTABLE-HYANNIS, MA 02601

Site 7 of 17 in cluster A

Actual: 40 ft.

NY MANIFEST:

Name:	BARNSTABLE MUNICIPAL AIRPORT
Address:	480 BARNSTABLE RD
City,State,Zip:	BARNSTABLE-HYANNIS, MA 02601

BARNSTABLE MUNICIPAL AIRPORT (Continued) **S119069526**

Country:	USA
EPA ID:	MAC300009198
Facility Status:	Not reported
Location Address 1:	480 BARNSTABLE RD 125 MARY DUNN RD
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BARNSTABLE-HYANNIS
Location State:	MA
Location Zip:	02601
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	MAC300009198
Mailing Name:	BARNSTABLE MUNICIPAL AIRPORT
Mailing Contact:	BARNSTABLE MUNICIPAL AIRPORT
Mailing Address 1:	480 BARNSTABLE RD 125 MARY DUNN RD
Mailing Address 2:	Not reported
Mailing City:	HYANNIS
Mailing State:	MA
Mailing Zip:	02601
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	5087787770

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2018
Trans1 State ID:	NJ0000027193
Trans2 State ID:	CTD021816889
Generator Ship Date:	08/31/2016
Trans1 Recv Date:	08/31/2016
Trans2 Recv Date:	09/07/2016
TSD Site Recv Date:	09/07/2016
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	MAC300009198
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NYD080469935
TSDF ID 2:	Not reported
Manifest Tracking Number:	014393127JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H040
Waste Code:	Not reported
Waste Code:	Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **S119069526**

Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	275
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	5
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	1
Waste Code:	D001
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

A8 **HERTZ CORP** **RCRA-SQG** **1023677262**
Target **480 BARNSTABLE RD** **MAC300102878**
Property **BARNSTABLE-HYANNIS, MA 02601**

Site 8 of 17 in cluster A

Actual:
40 ft.

RCRA Listings:

Date Form Received by Agency:	20161013
Handler Name:	Hertz Corp
Handler Address:	480 BARNSTABLE RD
Handler City,State,Zip:	BARNSTABLE-HYANNIS, MA 02601
EPA ID:	MAC300102878
Contact Name:	SCOTT GLASS
Contact Address:	40 SENATOR ST
Contact City,State,Zip:	WARWICK, RI 02888-0000
Contact Telephone:	401-738-3550 18
Contact Fax:	Not reported
Contact Email:	SGLASS@HERTZ.COM
Contact Title:	Not reported
EPA Region:	01
Land Type:	Private
Federal Waste Generator Description:	Small Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities, State-specific Activities
State District Owner:	Ma
State District:	S
Mailing Address:	480 BARNSTABLE RD
Mailing City,State,Zip:	HYANNIS, MA 02601-0000
Owner Name:	Barnstable Airport
Owner Type:	Private
Operator Name:	Hertz Corp
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No

HERTZ CORP (Continued) **1023677262**

Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	--Y
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20171020
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D003
Waste Description:	Reactive Waste

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name: HERTZ CORP	
Legal Status:	Private
Date Became Current:	19800101
Date Ended Current:	Not reported
Owner/Operator Address:	40 SENATOR ST
Owner/Operator City,State,Zip:	WARWICK, RI 02888-0000
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name: BARNSTABLE AIRPORT	
Legal Status:	Private

HERTZ CORP (Continued) **1023677262**

Date Became Current:	19280101
Date Ended Current:	Not reported
Owner/Operator Address:	40 SENATOR ST
Owner/Operator City,State,Zip:	WARWICK, RI 02888-0000
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20161013
Handler Name: HERTZ CORP	
Federal Waste Generator Description:	Small Quantity Generator
State District Owner:	Ma
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	532111
NAICS Description:	PASSENGER CAR RENTAL

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

A9 **BARNSTABLE MUNICIPAL AIRPORT** **RCRA-SQG** **1011862304**
Target **480 BARNSTABLE RD** **RI MANIFEST** **MAC300009198**
Property **BARNSTABLE-HYANNIS, MA 02601**

Site 9 of 17 in cluster A

Actual: 40 ft.

RCRA Listings:

Date Form Received by Agency:	20070928
Handler Name:	Barnstable Municipal Airport
Handler Address:	480 BARNSTABLE RD
Handler City,State,Zip:	BARNSTABLE-HYANNIS, MA 02601
EPA ID:	MAC300009198
Contact Name:	FRANK SANCHEZ
Contact Address:	480 BARNSTABLE RD
Contact City,State,Zip:	HYANNIS, MA 02601-0000
Contact Telephone:	508-775-2020
Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	01
Land Type:	Municipal
Federal Waste Generator Description:	Small Quantity Generator

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities, State-specific Activities
State District Owner:	Ma
State District:	S
Mailing Address:	480 BARNSTABLE RD
Mailing City,State,Zip:	HYANNIS, MA 02601-0000
Owner Name:	Barnstable Municipal Airport
Owner Type:	Municipal
Operator Name:	Barnstable Municipal Airport
Operator Type:	Municipal
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	--Y
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20171020
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	Ignitable Waste

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Waste Code: D018
Waste Description: Benzene

Handler - Owner Operator:
Owner/Operator Indicator: Owner
Owner/Operator Name: BARNSTABLE MUNICIPAL AIRPORT
Legal Status: Municipal
Date Became Current: 19980201
Date Ended Current: Not reported
Owner/Operator Address: 480 BARNSTABLE RD
Owner/Operator City,State,Zip: HYANNIS, MA 02601-0000
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: BARNSTABLE MUNICIPAL AIRPORT
Legal Status: Municipal
Date Became Current: 19980201
Date Ended Current: Not reported
Owner/Operator Address: 480 BARNSTABLE RD
Owner/Operator City,State,Zip: HYANNIS, MA 02601-0000
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20070928
Handler Name: BARNSTABLE MUNICIPAL AIRPORT
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Ma
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 811111
NAICS Description: GENERAL AUTOMOTIVE REPAIR

Has the Facility Received Notices of Violations:
Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 20070815
Actual Return to Compliance Date: 20100423
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 20080825

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Enforcement Identifier: 001
Date of Enforcement Action: 20080625
Enforcement Responsible Agency: State
Enforcement Docket Number: Acp-Se-08-R002
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: JWMA
Enforcement Responsible Sub-Organization: SE
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: State Statute or Regulation
Date Violation was Determined: 20070815
Actual Return to Compliance Date: 20100423
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 20080825
Enforcement Identifier: 001
Date of Enforcement Action: 20080625
Enforcement Responsible Agency: State
Enforcement Docket Number: Acp-Se-08-R002
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: JWMA
Enforcement Responsible Sub-Organization: SE
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 20070815
Actual Return to Compliance Date: 20100423
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 20080825
Enforcement Identifier: 001
Date of Enforcement Action: 20080625
Enforcement Responsible Agency: State
Enforcement Docket Number: Acp-Se-08-R002
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: JWMA
Enforcement Responsible Sub-Organization: SE
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: State Statute or Regulation
Date Violation was Determined: 20220715
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 20070815
Actual Return to Compliance Date: 20100423
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 20080825
Enforcement Identifier: 001
Date of Enforcement Action: 20080625
Enforcement Responsible Agency: State
Enforcement Docket Number: Acp-Se-08-R002
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: JWMA
Enforcement Responsible Sub-Organization: SE
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 20070815
Actual Return to Compliance Date: 20100423
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 20080825
Enforcement Identifier: 001
Date of Enforcement Action: 20080625
Enforcement Responsible Agency: State
Enforcement Docket Number: Acp-Se-08-R002
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: JWMA
Enforcement Responsible Sub-Organization: SE
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 20220715
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	State Statute or Regulation
Date Violation was Determined:	20070815
Actual Return to Compliance Date:	20100423
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State
Scheduled Compliance Date:	20080825
Enforcement Identifier:	001
Date of Enforcement Action:	20080625
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Acp-Se-08-R002
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person:	JWMA
Enforcement Responsible Sub-Organization:	SE
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 20070815
Actual Return to Compliance Date: 20100423
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 20080825
Enforcement Identifier: 001
Date of Enforcement Action: 20080625
Enforcement Responsible Agency: State
Enforcement Docket Number: Acp-Se-08-R002
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: JWMA
Enforcement Responsible Sub-Organization: SE
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Listing - General
Date Violation was Determined: 20070815
Actual Return to Compliance Date: 20100423
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 20080825
Enforcement Identifier: 001
Date of Enforcement Action: 20080625
Enforcement Responsible Agency: State
Enforcement Docket Number: Acp-Se-08-R002
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: JWMA
Enforcement Responsible Sub-Organization: SE
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Preparedness and Prevention
Date Violation was Determined: 20070815
Actual Return to Compliance Date: 20100423
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 20080825
Enforcement Identifier: 001
Date of Enforcement Action: 20080625
Enforcement Responsible Agency: State
Enforcement Docket Number: Acp-Se-08-R002
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: JWMA
Enforcement Responsible Sub-Organization: SE
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 20070815
Actual Return to Compliance Date: 20100423
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 20080825

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Enforcement Identifier: 001
Date of Enforcement Action: 20080625
Enforcement Responsible Agency: State
Enforcement Docket Number: Acp-Se-08-R002
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: JWMA
Enforcement Responsible Sub-Organization: SE
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - Manifest
Date Violation was Determined: 20070815
Actual Return to Compliance Date: 20100423
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 20080825
Enforcement Identifier: 001
Date of Enforcement Action: 20080625
Enforcement Responsible Agency: State
Enforcement Docket Number: Acp-Se-08-R002
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: JWMA
Enforcement Responsible Sub-Organization: SE
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 20070815
Actual Return to Compliance Date: 20100423
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 20080825
Enforcement Identifier: 001
Date of Enforcement Action: 20080625
Enforcement Responsible Agency: State
Enforcement Docket Number: Acp-Se-08-R002
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: JWMA
Enforcement Responsible Sub-Organization: SE
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Evaluation Action Summary:
Evaluation Date: 20070815
Evaluation Responsible Agency: State
Found Violation: Yes
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier: JWMA
Evaluation Responsible Sub-Organization: SE
Actual Return to Compliance Date: 20100423

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Scheduled Compliance Date:	20080825
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20070815
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	JWMA
Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	20100423
Scheduled Compliance Date:	20080825
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20070815
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	JWMA
Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	20100423
Scheduled Compliance Date:	20080825
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20220715
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	ACX
Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20070815
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	JWMA
Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	20100423
Scheduled Compliance Date:	20080825
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Evaluation Date:	20070815
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	JWMA
Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	20100423
Scheduled Compliance Date:	20080825
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20220715
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	ACX
Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20070815
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	JWMA
Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	20100423
Scheduled Compliance Date:	20080825
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20070815
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	JWMA
Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	20100423
Scheduled Compliance Date:	20080825
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20100323
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE SCHEDULE EVALUATION
Evaluation Responsible Person Identifier:	JWMA

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20070815
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	JWMA
Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	20100423
Scheduled Compliance Date:	20080825
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20070815
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	JWMA
Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	20100423
Scheduled Compliance Date:	20080825
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20070815
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	JWMA
Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	20100423
Scheduled Compliance Date:	20080825
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20070815
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	JWMA
Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	20100423
Scheduled Compliance Date:	20080825
Date of Request:	Not reported
Date Response Received:	Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20070815
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	JWMA
Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	20100423
Scheduled Compliance Date:	20080825
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

RI MANIFEST:

Name:	BARNSTABLE MUNICIPAL AIRPORT
Address:	480 BARNSTABLE RD
City,State,Zip:	BARNSTABLE-HYANNIS, MA 02601
EPA Id:	MAC300009198
GEN Cert Date:	5/6/2010
Manifest Document Number:	003201468FLE
Waste Description:	ABSORBENT MATERIAL & JET FUEL WITH BENZENE
TSDF Id:	RID040098352
TSDF Name:	Northland Environmental
Qty:	200
WT/Vol Units:	P
TSDF Date:	5/6/2010
Transporter 2 Id:	Not reported
Item Number:	32174
Transporter 2 Name:	Not reported
Transporter Name 2:	21ST CENTURY ENV MGT LLC, OF RI
Transporter EPAID:	RID980906986
Transporter Receipt Date:	5/6/2010
Number Of Containers:	Not reported
Container Type:	Not reported
Waste Code1:	D018
Waste Code2:	Not reported
Waste Code3:	Not reported
Waste Code4:	Not reported
Waste Code5:	Not reported
Waste Code6:	Not reported
Fee Exempt Code:	Not reported
Comment:	Not reported
Transporter Name 2:	Not reported
Company Permit Number:	Not reported
Year:	Not reported
Quarter:	Not reported
Transporter Contact Name:	Not reported
Transporter Contact Email:	Not reported
Filing Date:	Not reported
Total Fee:	Not reported
Billing Name:	Not reported
Paid Date:	Not reported
Paid Time:	Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Facility Receipt Date:	Not reported
Fee:	Not reported
Manifest Created Date:	Not reported
Manifest Updated Date:	Not reported

RI MANIFEST:

Transporter Receipt Date:	5/6/2010
Number Of Containers:	Not reported
Container Type:	Not reported
Waste Code1:	D018
Waste Code2:	Not reported
Waste Code3:	Not reported
Waste Code4:	Not reported
Waste Code5:	Not reported
Waste Code6:	Not reported
Comment:	Not reported
Fee Exempt Code:	Not reported
TSDF Name:	Northland Environmental
TSDF Id:	RID040098352
Transporter Name 2:	Not reported
Company Permit Number:	Not reported
Year:	Not reported
EPA ID:	MAC300009198
Manifest Docket Number:	003201468FLE
Quarter:	Not reported
Waste Description:	ABSORBENT MATERIAL & JET FUEL WITH BENZENE
Transporter Contact Name:	Not reported
Quantity:	200
Transporter Contact Email:	Not reported
WT/Vol Units:	P
Filing Date:	Not reported
Total Fee:	Not reported
Item Number:	32174
Transporter Name:	21ST CENTURY ENV MGT LLC, OF RI
Billing Name:	Not reported
Transporter EPA ID:	RID980906986
Date Paid:	Not reported
Time Paid:	Not reported
GEN Cert Date:	5/6/2010
Facility Receipt Date:	Not reported
Fee:	Not reported
Transporter 2 Receipt Date:	Not reported
Manifest Created Date:	Not reported
TSDF Receipt Date:	5/6/2010
Transporter 2 ID:	Not reported
Manifest Updated Date:	Not reported

Transporter Receipt Date:	5/6/2010
Number Of Containers:	Not reported
Container Type:	Not reported
Waste Code1:	D001D018
Waste Code2:	Not reported
Waste Code3:	Not reported
Waste Code4:	Not reported
Waste Code5:	Not reported
Waste Code6:	Not reported
Comment:	Not reported
Fee Exempt Code:	Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

TSDF Name:	Northland Environmental
TSDF Id:	RID040098352
Transporter Name 2:	Not reported
Company Permit Number:	Not reported
Year:	Not reported
EPA ID:	MAC300009198
Manifest Docket Number:	003201468FLE
Quarter:	Not reported
Waste Description:	JET FUEL
Transporter Contact Name:	Not reported
Quantity:	55
Transporter Contact Email:	Not reported
WT/Vol Units:	G
Filing Date:	Not reported
Total Fee:	Not reported
Item Number:	32173
Transporter Name:	21ST CENTURY ENV MGT LLC, OF RI
Billing Name:	Not reported
Transporter EPA ID:	RID980906986
Date Paid:	Not reported
Time Paid:	Not reported
GEN Cert Date:	5/6/2010
Facility Receipt Date:	Not reported
Fee:	Not reported
Transporter 2 Receipt Date:	Not reported
Manifest Created Date:	Not reported
TSDF Receipt Date:	5/6/2010
Transporter 2 ID:	Not reported
Manifest Updated Date:	Not reported
Transporter Receipt Date:	Not reported
Number Of Containers:	Not reported
Container Type:	Not reported
Waste Code1:	P
Waste Code2:	Not reported
Waste Code3:	Not reported
Waste Code4:	Not reported
Waste Code5:	Not reported
Waste Code6:	Not reported
Comment:	Not reported
Fee Exempt Code:	Not reported
TSDF Name:	Not reported
TSDF Id:	Not reported
Transporter Name 2:	Not reported
Company Permit Number:	Not reported
Year:	Not reported
EPA ID:	MAC300009198
Manifest Docket Number:	004816242JJK
Quarter:	Not reported
Waste Description:	FLAMMABLE SOLVENTS
Transporter Contact Name:	Not reported
Quantity:	458.69999999999999
Transporter Contact Email:	Not reported
WT/Vol Units:	D
Filing Date:	Not reported
Total Fee:	Not reported
Item Number:	686836

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Transporter Name:	MORAN ENVIRONMENTAL AND RECOVERY LLC
Billing Name:	Not reported
Transporter EPA ID:	MAR000504928
Date Paid:	Not reported
Time Paid:	Not reported
GEN Cert Date:	2/23/2009
Facility Receipt Date:	Not reported
Fee:	Not reported
Transporter 2 Receipt Date:	Not reported
Manifest Created Date:	Not reported
TSDF Receipt Date:	Not reported
Transporter 2 ID:	Not reported
Manifest Updated Date:	Not reported
Transporter Receipt Date:	Not reported
Number Of Containers:	Not reported
Container Type:	Not reported
Waste Code1:	P
Waste Code2:	Not reported
Waste Code3:	Not reported
Waste Code4:	Not reported
Waste Code5:	Not reported
Waste Code6:	Not reported
Comment:	Not reported
Fee Exempt Code:	Not reported
TSDF Name:	Not reported
TSDF Id:	Not reported
Transporter Name 2:	Not reported
Company Permit Number:	Not reported
Year:	Not reported
EPA ID:	MAC300009198
Manifest Docket Number:	004816242JJK
Quarter:	Not reported
Waste Description:	GASOLINE SPILL CLEAN UP
Transporter Contact Name:	Not reported
Quantity:	200
Transporter Contact Email:	Not reported
WT/Vol Units:	D
Filing Date:	Not reported
Total Fee:	Not reported
Item Number:	685487
Transporter Name:	MORAN ENVIRONMENTAL AND RECOVERY LLC
Billing Name:	Not reported
Transporter EPA ID:	MAR000504928
Date Paid:	Not reported
Time Paid:	Not reported
GEN Cert Date:	2/23/2009
Facility Receipt Date:	Not reported
Fee:	Not reported
Transporter 2 Receipt Date:	Not reported
Manifest Created Date:	Not reported
TSDF Receipt Date:	Not reported
Transporter 2 ID:	Not reported
Manifest Updated Date:	Not reported
Transporter Receipt Date:	Not reported
Number Of Containers:	Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Container Type:	Not reported
Waste Code1:	P
Waste Code2:	Not reported
Waste Code3:	Not reported
Waste Code4:	Not reported
Waste Code5:	Not reported
Waste Code6:	Not reported
Comment:	Not reported
Fee Exempt Code:	Not reported
TSDF Name:	Not reported
TSDF Id:	Not reported
Transporter Name 2:	Not reported
Company Permit Number:	Not reported
Year:	Not reported
EPA ID:	MAC300009198
Manifest Docket Number:	004816242JJK
Quarter:	Not reported
Waste Description:	GASOLINE SPILL CLEAN UP
Transporter Contact Name:	Not reported
Quantity:	200
Transporter Contact Email:	Not reported
WT/Vol Units:	D
Filing Date:	Not reported
Total Fee:	Not reported
Item Number:	685487
Transporter Name:	MORAN ENVIRONMENTAL AND RECOVERY LLC
Billing Name:	Not reported
Transporter EPA ID:	MAR000504928
Date Paid:	Not reported
Time Paid:	Not reported
GEN Cert Date:	2/23/2009
Facility Receipt Date:	Not reported
Fee:	Not reported
Transporter 2 Receipt Date:	Not reported
Manifest Created Date:	Not reported
TSDF Receipt Date:	Not reported
Transporter 2 ID:	Not reported
Manifest Updated Date:	Not reported
Transporter Receipt Date:	Not reported
Number Of Containers:	Not reported
Container Type:	Not reported
Waste Code1:	P
Waste Code2:	Not reported
Waste Code3:	Not reported
Waste Code4:	Not reported
Waste Code5:	Not reported
Waste Code6:	Not reported
Comment:	Not reported
Fee Exempt Code:	Not reported
TSDF Name:	Not reported
TSDF Id:	Not reported
Transporter Name 2:	Not reported
Company Permit Number:	Not reported
Year:	Not reported
EPA ID:	MAC300009198
Manifest Docket Number:	004816242JJK

BARNSTABLE MUNICIPAL AIRPORT (Continued) **1011862304**

Quarter:	Not reported
Waste Description:	FLAMMABLE SOLVENTS
Transporter Contact Name:	Not reported
Quantity:	458.69999999999999
Transporter Contact Email:	Not reported
WT/Vol Units:	D
Filing Date:	Not reported
Total Fee:	Not reported
Item Number:	686836
Transporter Name:	MORAN ENVIRONMENTAL AND RECOVERY LLC
Billing Name:	Not reported
Transporter EPA ID:	MAR000504928
Date Paid:	Not reported
Time Paid:	Not reported
GEN Cert Date:	2/23/2009
Facility Receipt Date:	Not reported
Fee:	Not reported
Transporter 2 Receipt Date:	Not reported
Manifest Created Date:	Not reported
TSDF Receipt Date:	Not reported
Transporter 2 ID:	Not reported
Manifest Updated Date:	Not reported

A10 **HERTZ COROPRATION** **MA TIER 2** **S114557279**
Target **HERTZ CORP. 480 BARNSTABLE RD.** **N/A**
Property **HYANNIS, MA 02601**

Site 10 of 17 in cluster A

Actual: **40 ft.**

TIER 2:

Name:	HERTZ COROPRATION
Address:	HERTZ CORP. 480 BARNSTABLE RD.
City,State,Zip:	HYANNIS, MA 02601
Report Year:	2014
Facility Id:	FATR20149265X0002H49
Facility Dept:	Not reported
Latitude:	41.66458
Longitude:	-70.28673
Mailing Address:	Not reported
Mailing City/State/Zip:	Not reported
Mailing Country:	Not reported
Notes:	Have Sulfuric Acid in bateries in rental cars. Max number of cars is 50 which represents 700 Lbs of the chemical on site max time.
All Chemicals Same As Last Yr:	T
Date Signed:	1/20/2015
Dike Or Other Safeguard:	Not reported
Failed Validation:	Not reported
Date Modified:	04/03/2015
Fees Total:	Not reported
Num Of Employees:	5
Site Coord Abbreviated?:	Not reported
Site Map:	T
State Label Code:	MA2014
Submitted By:	John Clancy Area Manager
Validation Report:	Not reported
Fire District:	Hyannis
Latlong Location Description:	Not reported

HERTZ COROPRATION (Continued) **S114557279**

Latlong Method: Not reported

Record Key: FDTR20149265X0003H4Q
Id: 532111
Type: NAICS
Description: Passenger Car Rental
Last Modified: 1/21/2013

Record Key: FDTR201492CFA5001H3E
Id: 006985196
Type: Dun & Bradstreet
Description: Passenger Car Rental
Last Modified: 1/21/2013

Record Key: FDTR201492CFBN002TBJ
Id: 7514
Type: SIC
Description: PASSENGER CAR RENTAL
Last Modified: 1/21/2013

Contact:
Report Year: 2014
Contact Record Id: CTTR20147R858Y00DP56
Title: Distro Mgr
Contact Name: Brennan
Contact Email: kbrennan@hertz.com
Contact Mail Address: 40 Senator St
Contact Mail City: Warwick
Contact Mail State: RI
Contact Mail Zip: 02888
Contact Mail Country: USA
Contact1 Type: Submitter
Contact2 Type: Emergency Contact
Contact3 Type: Not reported
Contact4 Type: Not reported
Modification Date: 1/20/2015

Contact:
Report Year: 2014
Contact Record Id: CTTR20147R85NY00JT0V
Title: carrier
Contact Name: Noonan
Contact Email: jpnoonan.com
Contact Mail Address: Not reported
Contact Mail City: W Bridgewater
Contact Mail State: MA
Contact Mail Zip: Not reported
Contact Mail Country: USA
Contact1 Type: Emergency Contact
Contact2 Type: Not reported
Contact3 Type: Not reported
Contact4 Type: Not reported
Modification Date: 1/20/2015

HERTZ COROPRATION (Continued) **S114557279**

Contact:

Report Year:	2014
Contact Record Id:	CTTR20149RQ71M00837Y
Title:	Area Manager
Contact Name:	Clancy
Contact Email:	jclancy@hertz.com
Contact Mail Address:	40 Senator St
Contact Mail City:	Warwick
Contact Mail State:	RI
Contact Mail Zip:	02888
Contact Mail Country:	USA
Contact1 Type:	Owner / Operator
Contact2 Type:	Emergency Contact
Contact3 Type:	Not reported
Contact4 Type:	Not reported
Modification Date:	1/20/2015

Contact:

Report Year:	2014
Contact Record Id:	CTTR20149RQ7AK00GUKJ
Title:	Agent
Contact Name:	Murphy
Contact Email:	drminc1@netzero.com
Contact Mail Address:	480 Barnstable Rd
Contact Mail City:	Hyannis
Contact Mail State:	MA
Contact Mail Zip:	02601
Contact Mail Country:	USA
Contact1 Type:	Emergency Contact
Contact2 Type:	Emergency Contact
Contact3 Type:	Not reported
Contact4 Type:	Not reported
Modification Date:	1/20/2015

Contact:

Report Year:	2014
Contact Record Id:	CTTR20149RZ7K20022NQ
Title:	distro
Contact Name:	brennan
Contact Email:	kbrennan@hertz.com
Contact Mail Address:	40 senator st
Contact Mail City:	warwick
Contact Mail State:	RI
Contact Mail Zip:	02888
Contact Mail Country:	USA
Contact1 Type:	Tier II Information Contact
Contact2 Type:	Not reported
Contact3 Type:	Not reported
Contact4 Type:	Not reported
Modification Date:	1/20/2015

Chemicals:

HERTZ COROPRATION (Continued) **S114557279**

Acute:	Not reported
Ave Amount:	27300
Ave Amount Code:	07
Chem Inv Record Id:	CVTR201492CFRD00BP3G
Chem Same As Last Yr:	T
Chronic:	T
CICAS:	8006-61-9
CI EHS Chemical:	Not reported
CI Last Modified:	1/20/2015
Days On Site:	365
Entered Chemical Name:	Unleaded Gasoline
Fire:	T
Gas:	Not reported
Liquid:	T
Max Amount:	54600
Max Amount Code:	08
Max Amt Container:	54600
Mixture:	T
Pressure:	Not reported
Pure:	Not reported
Reactive:	Not reported
Solid:	Not reported
State01 Checkbox:	Not reported
State01 Number:	54000
State01 Text:	Not reported
State02 Checkbox:	T
State02 Number:	6
State02 Text:	Year
State03 Checkbox:	Not reported
State03 Number:	36096
State03 Text:	Not reported
State04 Checkbox:	Not reported
State04 Number:	34032
State04 Text:	Liquid
State05 Checkbox:	Not reported
State05 Text:	Not reported
State06 Checkbox:	Not reported
State06 Text:	Not reported
State07 Checkbox:	Not reported
State07 Text:	Route 6 east,exit 6 to Route 132. Right turn on rt 132 and follow signs to Barnstable Airport. Right turn into Hertz wash bay at rental car lot.
State1 Contact Field:	J P Noonan
State Label Code:	MA2014
Trade Secret:	Not reported

Location:

Record Key:	CLTR201492CJYC001XG0
Chem Inv Record Id:	CVTR201492CFRD00BP3G
Type Code:	Below ground tank
Pressure Code:	Ambient pressure
Temperature Code:	Ambient temperature
Location:	North East of wash bay bldg.
Amount:	58380
Amount Unit:	pounds
Last Modified:	1/20/2015

Record Key:	CLTR20149RQ7U100MY0T

HERTZ COROPRATION (Continued) **S114557279**

Chem Inv Record Id:	CVTR201492CFRD00BP3G
Type Code:	Below ground tank
Pressure Code:	Ambient pressure
Temperature Code:	Ambient temperature
Location:	Northeast of Wash Bay Bldg
Amount:	58380
Amount Unit:	pounds
Last Modified:	1/20/2015
Acute:	Not reported
Ave Amount:	230
Ave Amount Code:	02
Chem Inv Record Id:	CVTR201492CG6K00CT33
Chem Same As Last Yr:	T
Chronic:	T
CICAS:	7664-93-9
CI EHS Chemical:	T
CI Last Modified:	1/20/2015
Days On Site:	365
Entered Chemical Name:	Sulfruric Acid
Fire:	T
Gas:	Not reported
Liquid:	T
Max Amount:	766
Max Amount Code:	03
Max Amt Container:	15
Mixture:	Not reported
Pressure:	Not reported
Pure:	T
Reactive:	Not reported
Solid:	Not reported
State01 Checkbox:	Not reported
State01 Number:	15
State01 Text:	battery in idividual cars
State02 Checkbox:	Not reported
State02 Number:	70
State02 Text:	Week
State03 Checkbox:	Not reported
State03 Number:	700
State03 Text:	Not reported
State04 Checkbox:	Not reported
State04 Number:	15
State04 Text:	Liquid
State05 Checkbox:	Not reported
State05 Text:	Not reported
State06 Checkbox:	Not reported
State06 Text:	Not reported
State07 Checkbox:	T
State07 Text:	Battery is in idividual car and comes down Rt 132 into Barnstable Airport wash bay for Hertz
State1 Contact Field:	no carrier - individual cars
State Label Code:	MA2014
Trade Secret:	Not reported

Location:

Record Key:	CLTR20149RQFVV00NU1N
Chem Inv Record Id:	CVTR201492CG6K00CT33

HERTZ COROPRATION (Continued) **S114557279**

Type Code:	Battery
Pressure Code:	Ambient pressure
Temperature Code:	Ambient temperature
Location:	480 Barnstable St Hyannis, Ma
Amount:	766
Amount Unit:	pounds
Last Modified:	1/20/2015

Chemical Mixture:

Record Key:	CMTR201492CKEZ003AZD
Chem Inv Rec Id:	CVTR201492CG6K00CT33
Mx Chem:	Not reported
Mx CAS:	Not reported
Percentage:	Not reported
Wt Vol:	Not reported
Mx EHS:	Not reported
Mx Last Modified:	1/20/2015

A11 **HERTZ CORP 1715-19** **MA AST** **A100464716**
Target **480 BARNSTABLE RD** **N/A**
Property **HYANNIS, MA 02601**

Site 11 of 17 in cluster A

Actual: **40 ft.**

AST:

Facility ID:	394951
Name:	HERTZ CORP 1715-19
Address:	480 BARNSTABLE RD
City,State,Zip:	HYANNIS, MA 02601-0000
Owner ID:	Not reported
Owner Address:	Not reported
Owner City:	Not reported
Owner State:	Not reported
Owner Zip:	Not reported
Owner Name:	THE HERTZ CORPORATION
Tank Type:	UST
Class:	STG1
Stage I Type:	Dual-Point
CARB # or System Type:	Pre-EVR/EVR
Test Cycle:	Annual
Date Form Mailed:	12/14/2022
Test Date:	Not reported
Postmark Date:	Not reported
Due Date:	04/06/2023
Product Type:	Screw-on
Vapor Type:	Screw-on
Form:	FormC
Form Rcvd and Complete:	Not Received
Description:	Not reported
Telephone:	Not reported
Fire Department:	Not reported
Date of Inspection:	Not reported
Inspector:	Not reported

HERTZ CORP 1715-19 (Continued) **A100464716**

Overfill Prevention:	Not reported
Tank ID:	Not reported
Serial Number:	Not reported
Spill Prevention:	Not reported
Tank Status:	Not reported
Capacity:	Not reported
Contents:	Not reported
Tank Use:	Not reported
Tank Material:	Not reported
Tank Construction:	Not reported
Tank Leak Detection:	Not reported
Pipe Material:	Not reported
Pipe Construction:	Not reported
Pipe Leak Detection:	Not reported
Aboveground:	Not reported

A12 **NO LOCATION AID** **MA RGA HWS** **S115036844**
Target Property **480 BARNSTABLE ROAD** **N/A**
HYANNIS, MA

Site 12 of 17 in cluster A

Actual: 40 ft.

RGA HWS:

1996	NO LOCATION AID	480 BARNSTABLE ROAD

A13 **NO LOCATION AID** **MA SHWS** **U003531078**
Target Property **480 BARNSTABLE RD** **MA LUST** **N/A**
HYANNIS, MA 02601 **MA AST**
MA RELEASE
Site 13 of 17 in cluster A **MA HW GEN**
MA TIER 2

Actual: 40 ft.

SHWS:

Name:	BARNSTABLE MUNICIPAL AIRPORT
Address:	480 BARNSTABLE ROAD
City,State,Zip:	BARNSTABLE, MA 026010000
Facility ID:	4-0026347
Source Type:	UNKNOWN
Release Town:	BARNSTABLE
Notification Date:	11/10/2016
Category:	TWO HR
Associated ID:	Not reported
Current Status:	TIERI
Status Date:	11/10/2017
Phase:	PHASE IV
Response Action Outcome:	Not reported
Oil Or Haz Material:	Not reported

Name:	BARNSTABLE MUNICIPAL AIRPORT
Address:	480 BARNSTABLE ROAD
City,State,Zip:	BARNSTABLE, MA 026010000
Facility ID:	4-0026347
Source Type:	USE OF AFF
Release Town:	BARNSTABLE
Notification Date:	11/10/2016
Category:	TWO HR

NO LOCATION AID (Continued) **U003531078**

Associated ID: Not reported
Current Status: TIERI
Status Date: 11/10/2017
Phase: PHASE IV
Response Action Outcome: Not reported
Oil Or Haz Material: Not reported

Name: BARNSTABLE MUNICIPAL AIRPORT
Address: 480 BARNSTABLE RD
City,State,Zip: HYANNIS, MA
Facility ID: 4-0021315
Source Type: Not reported
Release Town: BARNSTABLE
Notification Date: 06/18/2008
Category: TWO HR
Associated ID: Not reported
Current Status: RAO
Status Date: 08/15/2008
Phase: Not reported
Response Action Outcome: A2
Oil Or Haz Material: Oil

Name: NO LOCATION AID
Address: 480 BARNSTABLE RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0011841
Source Type: UNKNOWN
Release Town: BARNSTABLE
Notification Date: 12/01/1995
Category: 120 DY
Associated ID: Not reported
Current Status: RAONR
Status Date: 12/18/1996
Phase: Not reported
Response Action Outcome: Not reported
Oil Or Haz Material: Oil and Hazardous Material

Name: BARNSTABLE MUNICIPAL AIRPORT
Address: 480 BARNSTABLE RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0015600
Source Type: VEHICLE
Release Town: BARNSTABLE
Notification Date: 07/15/2000
Category: TWO HR
Associated ID: Not reported
Current Status: RAO
Status Date: 09/11/2000
Phase: Not reported
Response Action Outcome: A1
Oil Or Haz Material: Oil

Name: AIRPORT
Address: 480 BARNSTABLE RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0014472
Source Type: AIRCRAFT

NO LOCATION AID (Continued) **U003531078**

Release Town: BARNSTABLE
Notification Date: 01/23/1999
Category: TWO HR
Associated ID: Not reported
Current Status: RAO
Status Date: 06/28/1999
Phase: Not reported
Response Action Outcome: A2
Oil Or Haz Material: Oil

Name: BARNSTABLE MUNICIPAL AIRPORT
Address: 480 BARNSTABLE ROAD
City,State,Zip: HYANNIS, MA
Facility ID: 4-0026225
Source Type: AIRPLANE
Release Town: BARNSTABLE
Notification Date: 07/24/2016
Category: TWO HR
Associated ID: Not reported
Current Status: PSNC
Status Date: 09/20/2016
Phase: Not reported
Response Action Outcome: PN
Oil Or Haz Material: Not reported

LUST:

Facility:
Name: BARNSTABLE MUNICIPAL AIRPORT
Address: 480 BARNSTABLE ROAD
City,State,Zip: HYANNIS, MA 026010000
Current Status: **Permanent Solution with No Conditions**
Release Tracking Number/Current Status: 4-0026358 / PSNC
Status Date: 11/17/2016
Source Type: UST
Release Town: BARNSTABLE
Notification Date: 09/21/2016
Category: 72 HR
Associated ID: Not reported
Phase: Not reported
Response Action Outcome: PN - PN
Oil Or Haz Material: Not reported

Location Type: MUNICIPAL
Source: UST
Source: USTOTHER

Click here to access the MA DEP site for this facility:

Chemicals:
Chemical: Not reported
Quantity: Not reported

Actions:
Action Type: RNFE

NO LOCATION AID (Continued) **U003531078**

Action Status:	Transmittal, Notice, or Notification Received
Action Date:	11/16/2016
Response Action Outcome:	PN
Action Type:	Response Action Outcome - RAO
Action Status:	PSNRCD
Action Date:	11/17/2016
Response Action Outcome:	PN
Action Type:	Immediate Response Action
Action Status:	Imminent Hazard Evaluation Received
Action Date:	11/17/2016
Response Action Outcome:	PN
Action Type:	Immediate Response Action
Action Status:	Completion Statement Received
Action Date:	11/17/2016
Response Action Outcome:	PN
Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	4/30/2020
Response Action Outcome:	PN
Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	9/21/2016
Response Action Outcome:	PN
Action Type:	Immediate Response Action
Action Status:	Oral Approval of Plan or Action
Action Date:	9/21/2016
Response Action Outcome:	PN

Facility:

Name:	BARNSTABLE MUNICIPAL AIRPORT
Address:	480 BARNSTABLE ROAD
City,State,Zip:	HYANNIS, MA 026010000
Current Status:	**Permanent Solution with No Conditions**
Release Tracking Number/Current Status:	4-0026358 / PSNC
Status Date:	11/17/2016
Source Type:	USTOTHER
Release Town:	BARNSTABLE
Notification Date:	09/21/2016
Category:	72 HR
Associated ID:	Not reported
Phase:	Not reported
Response Action Outcome:	PN - PN
Oil Or Haz Material:	Not reported
Location Type:	MUNICIPAL
Source:	UST
Source:	USTOTHER

NO LOCATION AID (Continued) **U003531078**

Click here to access the MA DEP site for this facility:

Chemicals:
Chemical: Not reported
Quantity: Not reported

Actions:
Action Type: RNFE
Action Status: Transmittal, Notice, or Notification Received
Action Date: 11/16/2016
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: PSNRCD
Action Date: 11/17/2016
Response Action Outcome: PN

Action Type: Immediate Response Action
Action Status: Imminent Hazard Evaluation Received
Action Date: 11/17/2016
Response Action Outcome: PN

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 11/17/2016
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 4/30/2020
Response Action Outcome: PN

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 9/21/2016
Response Action Outcome: PN

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 9/21/2016
Response Action Outcome: PN

AST:
Facility ID: 274838
Name: CAPE COD GATEWAY AIRPORT
Address: 480 BARNSTABLE RD
City,State,Zip: HYANNIS, MA 02601-0000
Owner ID: Not reported
Owner Address: Not reported
Owner City: Not reported
Owner State: Not reported
Owner Zip: Not reported
Owner Name: CAPE COD GATEWAY AIRPORT
Tank Type: AST

NO LOCATION AID (Continued) **U003531078**

Class:	STG1
Stage I Type:	Dual-Point
CARB # or System Type:	Component EVR
Test Cycle:	Annual
Date Form Mailed:	08/17/2022
Test Date:	12/01/2022
Postmark Date:	12/13/2022
Due Date:	12/02/2022
Product Type:	Not reported
Vapor Type:	Not reported
Form:	FormC
Form Rcvd and Complete:	Complete
Description:	Not reported
Telephone:	Not reported
Fire Department:	Not reported
Date of Inspection:	Not reported
Inspector:	Not reported
Overfill Prevention:	Not reported
Tank ID:	Not reported
Serial Number:	Not reported
Spill Prevention:	Not reported
Tank Status:	Not reported
Capacity:	Not reported
Contents:	Not reported
Tank Use:	Not reported
Tank Material:	Not reported
Tank Construction:	Not reported
Tank Leak Detection:	Not reported
Pipe Material:	Not reported
Pipe Construction:	Not reported
Pipe Leak Detection:	Not reported
Aboveground:	Not reported

AST 2:

Name:	CAPE COD GATEWAY AIRPORT
Address:	480 BARNSTABLE ROAD
Address 2:	Not reported
Address 3:	Not reported
City,State,Zip:	HYANNIS, MA 02601
Owner Name:	Matthew Elia
License Number:	OSFM-03015
Expiration Date:	05/12/2026
License Type:	AST Use Permit
Tank Status:	Active
Last Inspection Date:	05/12/2016
Capacity:	20,000
Unit:	GALLONS

Name:	CAPE COD GATEWAY AIRPORT
Address:	480 BARNSTABLE ROAD
Address 2:	Not reported
Address 3:	Not reported
City,State,Zip:	HYANNIS, MA 02601
Owner Name:	Matthew Elia
License Number:	OSFM-02818
Expiration Date:	04/25/2026
License Type:	AST Use Permit

NO LOCATION AID (Continued) **U003531078**

Tank Status:	Active
Last Inspection Date:	04/25/2016
Capacity:	20,000
Unit:	GALLONS

Name:	CAPE COD GATEWAY AIRPORT
Address:	480 BARNSTABLE ROAD
Address 2:	Not reported
Address 3:	Not reported
City,State,Zip:	HYANNIS, MA 02601
Owner Name:	Matthew Elia
License Number:	OSFM-02817
Expiration Date:	04/25/2026
License Type:	AST Use Permit
Tank Status:	Active
Last Inspection Date:	04/25/2016
Capacity:	20,000
Unit:	GALLONS

Release:

Name:	NO LOCATION AID
Address:	480 BARNSTABLE RD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0011841 / RAONR
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	12/01/1995
Category:	120 DY
Status Date:	12/18/1996
Phase:	Not reported
Response Action Outcome:	-
Oil / Haz Material Type:	Oil and Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Tier Classification
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	10/11/1994
Response Action Outcome:	Not reported

Action Type:	Tier Classification
Action Status:	Tier 1B Classification
Action Date:	10/11/1994
Response Action Outcome:	Not reported

Action Type:	Tier Classification
Action Status:	Permit Effective Date
Action Date:	10/11/1994
Response Action Outcome:	Not reported

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	12/1/1995
Response Action Outcome:	Not reported

NO LOCATION AID (Continued) **U003531078**

Action Type:	RNF
Action Status:	Reportable Release under MGL 21E
Action Date:	12/10/1995
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	RTN Linked to TCLASS Via Tier Classification Submittal
Action Date:	12/18/1996
Response Action Outcome:	Not reported
Action Type:	RAO Not Required
Action Status:	Linked to a Tier Classified Site
Action Date:	12/18/1996
Response Action Outcome:	Not reported
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	12/28/1995
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	RTN Linked to TCLASS Via Tier Classification Submittal
Action Date:	4/6/1999
Response Action Outcome:	Not reported

Chemicals:

Chemical:	1,1,1,2-TETRACHLOROETHANE
Quantity:	360 micrograms per liter
Chemical:	TPH
Quantity:	8.2 milligrams per liter
Location Type:	MUNICIPAL
Source:	UNKNOWN
Name:	AIRPORT
Address:	480 BARNSTABLE RD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0014472 / RAO
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	01/23/1999
Category:	TWO HR
Status Date:	06/28/1999
Phase:	Not reported
Response Action Outcome:	A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type:	Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	1/23/1999
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

NO LOCATION AID (Continued) **U003531078**

Action Type: RLFA
Action Status: FOLOFF
Action Date: 1/23/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 1/23/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 3/17/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 3/18/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 3/29/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Written Plan Received
Action Date: 3/29/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 3/3/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 6/28/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 6/28/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Fee Received - FMCRA Use Only
Action Date: 7/1/1999

NO LOCATION AID (Continued) **U003531078**

Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: JET FUEL
Quantity: 20 gallons
Location Type: COMMERCIAL
Source: AIRCRAFT

Name: BARNSTABLE MUNICIPAL AIRPORT
Address: 480 BARNSTABLE RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0015600 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 07/15/2000
Category: TWO HR
Status Date: 09/11/2000
Phase: Not reported
Response Action Outcome: A1 - A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 10/28/2004
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 7/15/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 7/15/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 7/26/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 9/11/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

NO LOCATION AID (Continued) **U003531078**

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 9/11/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Chemicals:
Chemical: JET FUEL
Quantity: 25 gallons
Location Type: COMMERCIAL
Source: VEHICLE

Name: BARNSTABLE MUNICIPAL AIRPORT
Address: 480 BARNSTABLE RD
City,State,Zip: HYANNIS, MA
Release Tracking Number/Current Status: 4-0021315 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 06/18/2008
Category: TWO HR
Status Date: 08/15/2008
Phase: Not reported
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 12/1/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FLDD1U
Action Date: 6/18/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 6/18/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: FLDISS
Action Date: 6/18/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 6/18/2008

NO LOCATION AID (Continued) **U003531078**

Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 6/23/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 6/23/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 6/24/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 6/25/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 6/25/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 7/8/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 8/15/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RNFE
Action Status: Transmittal, Notice, or Notification Received
Action Date: 8/15/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: JET FUEL
Quantity: 25 gallons
Location Type: MUNICIPAL

Name: BARNSTABLE MUNICIPAL AIRPORT

NO LOCATION AID (Continued) **U003531078**

Address:	480 BARNSTABLE ROAD
City,State,Zip:	HYANNIS, MA
Release Tracking Number/Current Status:	4-0026225 / PSNC
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	07/24/2016
Category:	TWO HR
Status Date:	09/20/2016
Phase:	Not reported
Response Action Outcome:	PN - PN
Oil / Haz Material Type:	Not reported

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	10/14/2016
Response Action Outcome:	PN
Action Type:	Immediate Response Action
Action Status:	Oral Approval of Plan or Action
Action Date:	7/24/2016
Response Action Outcome:	PN
Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	7/24/2016
Response Action Outcome:	PN
Action Type:	RLFA
Action Status:	PRPMTG
Action Date:	7/24/2016
Response Action Outcome:	PN
Action Type:	RLFA
Action Status:	FLDD1U
Action Date:	7/24/2016
Response Action Outcome:	PN
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	8/9/2016
Response Action Outcome:	PN
Action Type:	Immediate Response Action
Action Status:	Completion Statement Received
Action Date:	9/20/2016
Response Action Outcome:	PN
Action Type:	Response Action Outcome - RAO
Action Status:	PSNRCD
Action Date:	9/20/2016
Response Action Outcome:	PN
Action Type:	RNFE
Action Status:	Transmittal, Notice, or Notification Received

NO LOCATION AID (Continued) **U003531078**

Action Date: 9/20/2016
Response Action Outcome: PN

Chemicals:
Chemical: Not reported
Quantity: Not reported
Location Type: COMMERCIAL
Location Type: STATE
Location Type: INDUSTRIAL
Location Type: MUNICIPAL
Source: AIRPLANE

Name: BARNSTABLE MUNICIPAL AIRPORT
Address: 480 BARNSTABLE ROAD
City,State,Zip: BARNSTABLE, MA 026010000
Release Tracking Number/Current Status: 4-0026347 / TIERI
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 11/10/2016
Category: TWO HR
Status Date: 11/10/2017
Phase: PHASE IV
Response Action Outcome: -
Oil / Haz Material Type: Not reported

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Phase 4
Action Status: Written Plan Received
Action Date: 1/13/2023
Response Action Outcome: Not reported

Action Type: Phase 2
Action Status: Revised Statement or Transmittal Received
Action Date: 1/28/2022
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: TCEXT
Action Date: 1/5/2023
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Modified Revised or Updated Plan Received
Action Date: 10/11/2019
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 10/14/2021
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 10/15/2019

NO LOCATION AID (Continued) **U003531078**

Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 10/26/2018
Response Action Outcome: Not reported

Action Type: Compliance and Enforcement Action
Action Status: RFI
Action Date: 10/27/2017
Response Action Outcome: Not reported

Action Type: Compliance and Enforcement Action
Action Status: Interim Deadline Letter Issued
Action Date: 10/27/2017
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 10/5/2022
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Level I - Technical Screen Audit
Action Date: 10/5/2022
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 10/8/2020
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 11/10/2017
Response Action Outcome: Not reported

Action Type: Phase 1
Action Status: Completion Statement Received
Action Date: 11/10/2017
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: TIERI
Action Date: 11/10/2017
Response Action Outcome: Not reported

Action Type: An activity type that is related to an Audit
Action Status: AFUPLN
Action Date: 11/10/2021
Response Action Outcome: Not reported

Action Type: Phase 4
Action Status: Written Plan Received
Action Date: 11/10/2022
Response Action Outcome: Not reported

NO LOCATION AID (Continued) **U003531078**

Action Type: Immediate Response Action
Action Status: Level I - Technical Screen Audit
Action Date: 11/14/2018
Response Action Outcome: Not reported

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 11/15/2016
Response Action Outcome: Not reported

Action Type: Compliance and Enforcement Action
Action Status: RFI
Action Date: 11/22/2016
Response Action Outcome: Not reported

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 11/22/2016
Response Action Outcome: Not reported

Action Type: Compliance and Enforcement Action
Action Status: Interim Deadline Letter Issued
Action Date: 11/22/2016
Response Action Outcome: Not reported

Action Type: PIP
Action Status: Public Comment Period Initiated on Submittal
Action Date: 11/23/2022
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 11/3/2017
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Level I - Technical Screen Audit
Action Date: 11/5/2021
Response Action Outcome: Not reported

Action Type: Phase 2
Action Status: Notice of Delay in Meeting RA Deadline Received
Action Date: 11/6/2020
Response Action Outcome: Not reported

Action Type: Phase 3
Action Status: Notice of Delay in Meeting RA Deadline Received
Action Date: 11/9/2021
Response Action Outcome: Not reported

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 12/10/2020
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Written Plan Received

NO LOCATION AID (Continued) **U003531078**

Action Date: 12/16/2016
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Modified Revised or Updated Plan Received
Action Date: 12/2/2019
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Level I - Technical Screen Audit
Action Date: 12/26/2017
Response Action Outcome: Not reported

Action Type: RLFA
Action Status: FLDRUN
Action Date: 2/17/2022
Response Action Outcome: Not reported

Action Type: RLFA
Action Status: FLDRUN
Action Date: 2/24/2022
Response Action Outcome: Not reported

Action Type: RNFE
Action Status: Transmittal, Notice, or Notification Received
Action Date: 2/28/2017
Response Action Outcome: Not reported

Action Type: Phase 2
Action Status: Revised Statement or Transmittal Received
Action Date: 3/12/2021
Response Action Outcome: Not reported

Action Type: RLFA
Action Status: FLDRUN
Action Date: 3/16/2022
Response Action Outcome: Not reported

Action Type: An activity type that is related to an Audit
Action Status: NOA
Action Date: 3/30/2021
Response Action Outcome: Not reported

Action Type: PIP
Action Status: Public Comment Period Initiated on Submittal
Action Date: 4/1/2022
Response Action Outcome: Not reported

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 4/1/2022
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Modified Revised or Updated Plan Received
Action Date: 4/14/2017
Response Action Outcome: Not reported

NO LOCATION AID (Continued) **U003531078**

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 4/14/2017
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 4/14/2022
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Level I - Technical Screen Audit
Action Date: 4/14/2022
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 4/15/2019
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 4/15/2020
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 4/16/2021
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 4/24/2018
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Level I - Technical Screen Audit
Action Date: 4/27/2020
Response Action Outcome: Not reported

Action Type: RLFA
Action Status: FLDRUN
Action Date: 5/14/2018
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Level I - Technical Screen Audit
Action Date: 5/2/2017
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Level I - Technical Screen Audit
Action Date: 5/22/2018
Response Action Outcome: Not reported

Action Type: An activity type that is related to an Audit
Action Status: NAFNVD

NO LOCATION AID (Continued) **U003531078**

Action Date: 6/1/2018
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Level II - Audit Inspection
Action Date: 6/1/2018
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Level I - Technical Screen Audit
Action Date: 6/10/2021
Response Action Outcome: Not reported

Action Type: Phase 3
Action Status: Revised Statement or Transmittal Received
Action Date: 6/13/2022
Response Action Outcome: Not reported

Action Type: RLFA
Action Status: FOLOFF
Action Date: 6/14/2021
Response Action Outcome: Not reported

Action Type: Compliance and Enforcement Action
Action Status: Interim Deadline Letter Issued
Action Date: 6/18/2019
Response Action Outcome: Not reported

Action Type: PIP
Action Status: PIPDLY
Action Date: 6/28/2019
Response Action Outcome: Not reported

Action Type: RLFA
Action Status: FOLOFF
Action Date: 6/5/2020
Response Action Outcome: Not reported

Action Type: PIP
Action Status: Public Comment Period Initiated on Submittal
Action Date: 7/15/2019
Response Action Outcome: Not reported

Action Type: PIP
Action Status: PIPMTG
Action Date: 7/15/2019
Response Action Outcome: Not reported

Action Type: PIP
Action Status: PLANDT
Action Date: 7/15/2019
Response Action Outcome: Not reported

Action Type: PIP
Action Status: Legal Notice Published
Action Date: 7/15/2019
Response Action Outcome: Not reported

NO LOCATION AID (Continued) **U003531078**

Action Type:	An activity type that is related to an Audit
Action Status:	Level III - Comprehensive Audit
Action Date:	8/24/2021
Response Action Outcome:	Not reported

Action Type:	An activity type that is related to an Audit
Action Status:	Notice of Non-compliance related to an Audit
Action Date:	8/26/2021
Response Action Outcome:	Not reported

Action Type:	PIP
Action Status:	Written Plan Received
Action Date:	9/17/2019
Response Action Outcome:	Not reported

Chemicals:

Chemical:	Not reported
Quantity:	Not reported
Location Type:	INDUSTRIAL
Location Type:	AIRPORT
Location Type:	MUNICIPAL
Location Type:	ROADWAY
Location Type:	COMMERCIAL
Source:	UNKNOWN
Source:	USE OF AFF

Name:	BARNSTABLE MUNICIPAL AIRPORT
Address:	480 BARNSTABLE ROAD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0026358 / PSNC
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	09/21/2016
Category:	72 HR
Status Date:	11/17/2016
Phase:	Not reported
Response Action Outcome:	PN - PN
Oil / Haz Material Type:	Not reported

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	RNFE
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	11/16/2016
Response Action Outcome:	PN

Action Type:	Response Action Outcome - RAO
Action Status:	PSNRCD
Action Date:	11/17/2016
Response Action Outcome:	PN

Action Type:	Immediate Response Action
Action Status:	Imminent Hazard Evaluation Received
Action Date:	11/17/2016
Response Action Outcome:	PN

NO LOCATION AID (Continued) **U003531078**

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 11/17/2016
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 4/30/2020
Response Action Outcome: PN

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 9/21/2016
Response Action Outcome: PN

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 9/21/2016
Response Action Outcome: PN

Chemicals:
Chemical: Not reported
Quantity: Not reported
Location Type: MUNICIPAL
Source: UST
Source: USTOTHER

HW GEN:
Name: HERTZ CORP
Address: 480 BARNSTABLE RD
City,State,Zip: HYANNIS, MA 02601
EPA Id: MAC300102878
RCRA Generator Status: SQG
State Generator Status: SQG-MA

Name: BARNSTABLE MUNICIPAL AIRPORT
Address: 480 BARNSTABLE RD
City,State,Zip: HYANNIS, MA 02601
EPA Id: MAC300009198
RCRA Generator Status: SQG
State Generator Status: SQG-MA

TIER 2:
Name: BARNSTABLE MUNICIPAL AIRPORT - RAC
Address: 480 BARNSTABLE ROAD
City,State,Zip: HYANNIS, MA 02601
Report Year: 2018
Facility Id: FATR2018000000041388
Facility Dept: Not reported
Latitude: 41.667000
Longitude: -70.286900
Mailing Address: 480 Barnstable Road
Mailing City/State/Zip: 02888
Mailing Country: Not reported
Notes: Not reported
All Chemicals Same As Last Yr: Not reported

NO LOCATION AID (Continued) **U003531078**

Date Signed:	2019-03-04
Dike Or Other Safeguard:	Not reported
Failed Validation:	Not reported
Date Modified:	03/04/2019
Fees Total:	Not reported
Num Of Employees:	20
Site Coord Abbreviated?:	false
Site Map:	Not reported
State Label Code:	Not reported
Submitted By:	Not reported
Validation Report:	Not reported
Fire District:	Not reported
Latlong Location Description:	Not reported
Latlong Method:	Not reported
Record Key:	FDTR2018000000025513
Id:	Not reported
Type:	EIN
Description:	Not reported
Last Modified:	Not reported
Record Key:	FDTR2018000000025514
Id:	Not reported
Type:	RMP
Description:	Not reported
Last Modified:	Not reported
Record Key:	FDTR2018000000025515
Id:	Not reported
Type:	State ID
Description:	Not reported
Last Modified:	Not reported
Record Key:	FDTR2018000000025516
Id:	Not reported
Type:	TRI
Description:	Not reported
Last Modified:	Not reported
Record Key:	FDTR2018000000025517
Id:	Not reported
Type:	DUN & BradStreet
Description:	Not reported
Last Modified:	Not reported
Record Key:	FDTR2018000000025518
Id:	Not reported
Type:	NAICS
Description:	Not reported
Last Modified:	Not reported
Record Key:	FDTR2018000000025519
Id:	Not reported
Type:	SIC
Description:	Not reported
Last Modified:	Not reported

NO LOCATION AID (Continued) **U003531078**

Record Key:	FDTR2018000000025520
Id:	Not reported
Type:	T2M Facility ID
Description:	Not reported
Last Modified:	Not reported

Contact:

Report Year:	2018
Contact Record Id:	CTTR2018383215P41388
Title:	Not reported
Contact Name:	Not reported
Contact Email:	Not reported
Contact Mail Address:	Not reported
Contact Mail City:	Not reported
Contact Mail State:	MA
Contact Mail Zip:	Not reported
Contact Mail Country:	US
Contact1 Type:	Parent Company
Contact2 Type:	Not reported
Contact3 Type:	Not reported
Contact4 Type:	Not reported
Modification Date:	1900-01-01

Contact:

Report Year:	2018
Contact Record Id:	CTTR2018383221P41388
Title:	Environmental Compliance Analyst of The Hertz Corporation
Contact Name:	Blanks
Contact Email:	jessica.blanks@hertz.com
Contact Mail Address:	Not reported
Contact Mail City:	Not reported
Contact Mail State:	Not reported
Contact Mail Zip:	Not reported
Contact Mail Country:	Not reported
Contact1 Type:	Emergency Contact
Contact2 Type:	Not reported
Contact3 Type:	Not reported
Contact4 Type:	Not reported
Modification Date:	1900-01-01

Contact:

Report Year:	2018
Contact Record Id:	CTTR2018383217P41388
Title:	Not reported
Contact Name:	Not reported
Contact Email:	Not reported
Contact Mail Address:	Not reported
Contact Mail City:	Not reported
Contact Mail State:	Not reported
Contact Mail Zip:	Not reported
Contact Mail Country:	Not reported
Contact1 Type:	Billing
Contact2 Type:	Not reported
Contact3 Type:	Not reported

NO LOCATION AID (Continued) **U003531078**

Contact4 Type: Not reported
Modification Date: 1900-01-01

Contact:
Report Year: 2018
Contact Record Id: CTTR2018383222P41388
Title: Distribution Manager
Contact Name: Cranston
Contact Email: ncranston@hertz.com
Contact Mail Address: Not reported
Contact Mail City: Not reported
Contact Mail State: Not reported
Contact Mail Zip: Not reported
Contact Mail Country: Not reported
Contact1 Type: Emergency Contact
Contact2 Type: Not reported
Contact3 Type: Not reported
Contact4 Type: Not reported
Modification Date: 1900-01-01

Contact:
Report Year: 2018
Contact Record Id: CTTR2018383220P41388
Title: Area Manager
Contact Name: Clancy
Contact Email: jclancy@hertz.com
Contact Mail Address: Not reported
Contact Mail City: Not reported
Contact Mail State: Not reported
Contact Mail Zip: Not reported
Contact Mail Country: Not reported
Contact1 Type: Tier II Information Contact
Contact2 Type: Not reported
Contact3 Type: Not reported
Contact4 Type: Not reported
Modification Date: 1900-01-01

Contact:
Report Year: 2018
Contact Record Id: CTTR2018383216P41388
Title: Not reported
Contact Name: Blanks
Contact Email: jessica.blanks@hertz.com
Contact Mail Address: 8501 Williams Road
Contact Mail City: Estero
Contact Mail State: FL
Contact Mail Zip: 33928
Contact Mail Country: US
Contact1 Type: Owner / Operator
Contact2 Type: Not reported
Contact3 Type: Not reported
Contact4 Type: Not reported
Modification Date: 1900-01-01

NO LOCATION AID (Continued) **U003531078**

Contact:

Report Year:	2018
Contact Record Id:	CTTR2018383219P41388
Title:	Not reported
Contact Name:	Not reported
Contact Email:	ncranston@hertz.com
Contact Mail Address:	480 Barnstable Road
Contact Mail City:	Hyannis
Contact Mail State:	MA
Contact Mail Zip:	02601
Contact Mail Country:	US
Contact1 Type:	Other
Contact2 Type:	Not reported
Contact3 Type:	Not reported
Contact4 Type:	Not reported
Modification Date:	1900-01-01

Contact:

Report Year:	2018
Contact Record Id:	CTTR2018155263P41388
Title:	Not reported
Contact Name:	in individual cars
Contact Email:	Not reported
Contact Mail Address:	480 Barnstable Road
Contact Mail City:	Barnstable
Contact Mail State:	MA
Contact Mail Zip:	02601--
Contact Mail Country:	Not reported
Contact1 Type:	Carrier Contact
Contact2 Type:	Not reported
Contact3 Type:	Not reported
Contact4 Type:	Not reported
Modification Date:	1900-01-01

Chemicals:

Acute:	Not reported
Ave Amount:	Not reported
Ave Amount Code:	Not reported
Chem Inv Record Id:	CVTR2018000000155262
Chem Same As Last Yr:	false
Chronic:	Not reported
CICAS:	8006619
CI EHS Chemical:	false
CI Last Modified:	2019-03-04
Days On Site:	365
Entered Chemical Name:	Gasoline
Fire:	Not reported
Gas:	false
Liquid:	true
Max Amount:	5.460
Max Amount Code:	8
Max Amt Container:	54600
Mixture:	false
Pressure:	Not reported

NO LOCATION AID (Continued) **U003531078**

Pure:	true
Reactive:	Not reported
Solid:	false
State01 Checkbox:	Not reported
State01 Number:	Not reported
State01 Text:	Not reported
State02 Checkbox:	Not reported
State02 Number:	Not reported
State02 Text:	Not reported
State03 Checkbox:	Not reported
State03 Number:	Not reported
State03 Text:	Not reported
State04 Checkbox:	Not reported
State04 Number:	Not reported
State04 Text:	Not reported
State05 Checkbox:	Not reported
State05 Text:	Not reported
State06 Checkbox:	Not reported
State06 Text:	Not reported
State07 Checkbox:	Not reported
State07 Text:	Not reported
State1 Contact Field:	Not reported
State Label Code:	Not reported
Trade Secret:	false

Location:

Record Key:	CLTR201800000S427447
Chem Inv Record Id:	CVTR2018000000155262
Type Code:	Below ground tank
Pressure Code:	Ambient pressure
Temperature Code:	Ambient temperature
Location:	Northeast of wash bay building
Amount:	58380
Amount Unit:	lbs
Last Modified:	2019-03-04

Acute:	Not reported
Ave Amount:	Not reported
Ave Amount Code:	Not reported
Chem Inv Record Id:	CVTR2018000000155263
Chem Same As Last Yr:	false
Chronic:	Not reported
CICAS:	7664939
CI EHS Chemical:	true
CI Last Modified:	2019-03-04
Days On Site:	365
Entered Chemical Name:	Sulfuric acid
Fire:	Not reported
Gas:	false
Liquid:	true
Max Amount:	7.660
Max Amount Code:	3
Max Amt Container:	15
Mixture:	false
Pressure:	Not reported
Pure:	true
Reactive:	Not reported

NO LOCATION AID (Continued) **U003531078**

Solid:	false
State01 Checkbox:	Not reported
State01 Number:	Not reported
State01 Text:	Not reported
State02 Checkbox:	Not reported
State02 Number:	Not reported
State02 Text:	Not reported
State03 Checkbox:	Not reported
State03 Number:	Not reported
State03 Text:	Not reported
State04 Checkbox:	Not reported
State04 Number:	Not reported
State04 Text:	Not reported
State05 Checkbox:	Not reported
State05 Text:	Not reported
State06 Checkbox:	Not reported
State06 Text:	Not reported
State07 Checkbox:	Not reported
State07 Text:	Not reported
State1 Contact Field:	Not reported
State Label Code:	Not reported
Trade Secret:	false

Location:

Record Key:	CLTR201800000S427449
Chem Inv Record Id:	CVTR2018000000155263
Type Code:	Battery
Pressure Code:	Ambient pressure
Temperature Code:	Ambient temperature
Location:	480 Barnstable Street
Amount:	766
Amount Unit:	lbs
Last Modified:	2019-03-04

A14 **BARNSTABLE MUNICIPAL AIRPORT** **MA SHWS** **U004246631**
Target **480 BARNSTABLE RD** **MA UST** **N/A**
Property **BARNSTABLE, MA 02601** **MA RELEASE**
MA ASBESTOS
Site 14 of 17 in cluster A **MA Financial Assurance**

Actual:
40 ft.

SHWS:

Name:	UPPER GATE AND LEWIS PONDS, BARN AIRPORT
Address:	480 BARNSTABLE ROAD
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0028577
Source Type:	UNKNOWN
Release Town:	BARNSTABLE
Notification Date:	10/29/2020
Category:	120 DY
Associated ID:	Not reported
Current Status:	TIERII

BARNSTABLE MUNICIPAL AIRPORT (Continued) **U004246631**

Status Date: 11/08/2021
Phase: PHASE II
Response Action Outcome: Not reported
Oil Or Haz Material: Not reported

UST:

Facility:
Name: BARNSTABLE MUNICIPAL AIRPORT
Address: 480 BARNSTABLE RD
City,State,Zip: BARNSTABLE, MA 02601
Facility ID: 1114
Owner Id: 6772
Owner: TOWN OF BARNSTABLE
Owner Address: 480 BARNSTABLE RD
Owner City,St,Zip: BARNSTABLE, MA 02601
Telephone: Not reported
Description: Airport
Facility address 2: Not reported
Owner address 2: Not reported
Latitude: 41.67864
Longitude: -70.29430
Contact name: Not reported
Contact address1: Not reported
Contact address2: Not reported
Contact city: Not reported
Contact state: Not reported
Contact zip: Not reported
Contact email: Not reported
Update: 2018-01-25 00:00:00
Update by: Erin Swallow
Fac status: CLOSED

Name: BARNSTABLE MUNICIPAL AIRPORT
Address: 480 BARNSTABLE RD
City,State,Zip: BARNSTABLE, MA 02601
Facility ID: 1114
Owner Id: 6772
Owner: TOWN OF BARNSTABLE
Owner Address: 480 BARNSTABLE RD
Owner City,St,Zip: BARNSTABLE, MA 02601
Telephone: Not reported
Description: Airport
Facility address 2: Not reported
Owner address 2: Not reported
Latitude: 41.67864
Longitude: -70.29430
Contact name: Not reported
Contact address1: Not reported
Contact address2: Not reported
Contact city: Not reported
Contact state: Not reported
Contact zip: Not reported
Contact email: Not reported
Update: 2018-01-25 00:00:00
Update by: Erin Swallow
Fac status: CLOSED

BARNSTABLE MUNICIPAL AIRPORT (Continued) **U004246631**

Tank ID: 1
Tank Status: Tank Removed
Status Date: 06/01/1993
Date Installed: 04/01/1970
Capacity: 29000.00000
Contents: Jet Fuel
Tank Usage: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Latitude: Not reported
Longitude: Not reported
Tank construct: Not reported
Pipe construct: Not reported
Ptype: Not reported
Number of compartment: Not reported
Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N
Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N
Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N
Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported
Leak corrosion type: Not reported

Tank ID: 10
Tank Status: Tank Removed
Status Date: 10/20/1998
Date Installed: 04/01/1981
Capacity: 6000.00000
Contents: Gasoline
Tank Usage: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Latitude: Not reported
Longitude: Not reported
Tank construct: Not reported
Pipe construct: Not reported
Ptype: Not reported
Number of compartment: Not reported
Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N
Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N
Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N

BARNSTABLE MUNICIPAL AIRPORT (Continued) **U004246631**

Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported
Leak corrosion type: Not reported

Tank ID: 11
Tank Status: Tank Removed
Status Date: 10/25/2017
Date Installed: 06/01/1990
Capacity: 550.00000
Contents: Diesel
Tank Usage: Not reported
Tank Leak Detection: Continuous Interstitial Monitoring
Pipe Leak Detection: Quarterly visual inspection and annual product line tightness test
Latitude: Not reported
Longitude: Not reported
Tank construct: Double-walled non-corrodible (including "composite") material (cathodic protection not required)
Pipe construct: Single-walled metal (Corrosion protection required)
Ptype: Not reported
Number of compartment: Not reported
Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N
Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N
Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N
Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported
Leak corrosion type: Not reported

Tank ID: 12
Tank Status: Tank Removed
Status Date: 08/01/1993
Date Installed: 01/01/1959
Capacity: 500.00000
Contents: Diesel
Tank Usage: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Latitude: Not reported
Longitude: Not reported
Tank construct: Not reported
Pipe construct: Not reported
Ptype: Not reported
Number of compartment: Not reported
Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N

BARNSTABLE MUNICIPAL AIRPORT (Continued) **U004246631**

Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N
Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N
Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported
Leak corrosion type: Not reported

Tank ID: 13
Tank Status: Tank Closure In-Plac
Status Date: 01/01/1988
Date Installed: 01/01/1959
Capacity: 1000.00000
Contents: Diesel
Tank Usage: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Latitude: Not reported
Longitude: Not reported
Tank construct: Not reported
Pipe construct: Not reported
Ptype: Not reported
Number of compartment: Not reported
Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N
Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N
Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N
Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported
Leak corrosion type: Not reported

Tank ID: 14
Tank Status: Tank Closure In-Plac
Status Date: 01/01/1981
Date Installed: 01/01/1961
Capacity: 2000.00000
Contents: Gasoline
Tank Usage: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Latitude: Not reported
Longitude: Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **U004246631**

Tank construct: Not reported
Pipe construct: Not reported
Ptype: Not reported
Number of compartment: Not reported
Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N
Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N
Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N
Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported
Leak corrosion type: Not reported

Tank ID: 2
Tank Status: Tank Removed
Status Date: 06/01/1993
Date Installed: 10/01/1959
Capacity: 10000.00000
Contents: Jet Fuel
Tank Usage: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Latitude: Not reported
Longitude: Not reported
Tank construct: Not reported
Pipe construct: Not reported
Ptype: Not reported
Number of compartment: Not reported
Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N
Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N
Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N
Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported
Leak corrosion type: Not reported

Tank ID: 3
Tank Status: Tank Removed
Status Date: 06/01/1993
Date Installed: 10/01/1959

BARNSTABLE MUNICIPAL AIRPORT (Continued) **U004246631**

Capacity: 10000.00000
Contents: Jet Fuel
Tank Usage: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Latitude: Not reported
Longitude: Not reported
Tank construct: Not reported
Pipe construct: Not reported
Ptype: Not reported
Number of compartment: Not reported
Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N
Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N
Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N
Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported
Leak corrosion type: Not reported

Tank ID: 4
Tank Status: Tank Removed
Status Date: 06/01/1993
Date Installed: 10/01/1959
Capacity: 5000.00000
Contents: Gasoline
Tank Usage: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Latitude: Not reported
Longitude: Not reported
Tank construct: Not reported
Pipe construct: Not reported
Ptype: Not reported
Number of compartment: Not reported
Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N
Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N
Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N
Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **U004246631**

Leak corrosion type: Not reported

Tank ID: 5
Tank Status: Tank Removed
Status Date: 06/01/1993
Date Installed: 10/01/1959
Capacity: 5000.00000
Contents: Gasoline
Tank Usage: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Latitude: Not reported
Longitude: Not reported
Tank construct: Not reported
Pipe construct: Not reported
Ptype: Not reported
Number of compartment: Not reported
Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N
Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N
Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N
Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported
Leak corrosion type: Not reported

Tank ID: 6
Tank Status: Tank Removed
Status Date: 09/21/2016
Date Installed: 05/01/1985
Capacity: 20000.00000
Contents: Jet Fuel
Tank Usage: Not reported
Tank Leak Detection: Continuous Interstitial Monitoring
Pipe Leak Detection: Quarterly visual inspection and annual product line tightness test
Latitude: Not reported
Longitude: Not reported
Tank construct: Double-walled non-corrodible (including "composite") material (cathodic protection not required)
Pipe construct: Single-walled metal (Corrosion protection required)
Ptype: Not reported
Number of compartment: Not reported
Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N
Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N

BARNSTABLE MUNICIPAL AIRPORT (Continued) **U004246631**

Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N
Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported
Leak corrosion type: Not reported

Tank ID: 7
Tank Status: Tank Removed
Status Date: 06/01/1993
Date Installed: 04/01/1970
Capacity: 275.00000
Contents: Jet Fuel
Tank Usage: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Latitude: Not reported
Longitude: Not reported
Tank construct: Not reported
Pipe construct: Not reported
Ptype: Not reported
Number of compartment: Not reported
Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N
Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N
Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N
Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported
Leak corrosion type: Not reported

Tank ID: 8
Tank Status: Tank Removed
Status Date: 03/01/1993
Date Installed: 04/01/1959
Capacity: 2000.00000
Contents: Gasoline
Tank Usage: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Latitude: Not reported
Longitude: Not reported
Tank construct: Not reported
Pipe construct: Not reported
Ptype: Not reported
Number of compartment: Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **U004246631**

Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N
Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N
Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N
Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported
Leak corrosion type: Not reported

Tank ID: 9
Tank Status: Tank Removed
Status Date: 10/20/1998
Date Installed: 04/01/1981
Capacity: 2000.00000
Contents: Diesel
Tank Usage: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Latitude: Not reported
Longitude: Not reported
Tank construct: Not reported
Pipe construct: Not reported
Ptype: Not reported
Number of compartment: Not reported
Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N
Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N
Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N
Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported
Leak corrosion type: Not reported

Release:
Name: UPPER GATE AND LEWIS PONDS, BARN AIRPORT
Address: 480 BARNSTABLE ROAD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0028577 / TIERII
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 10/29/2020
Category: 120 DY

BARNSTABLE MUNICIPAL AIRPORT (Continued) **U004246631**

Status Date: 11/08/2021
Phase: PHASE II
Response Action Outcome: -
Oil / Haz Material Type: Not reported

Click here to access the MA DEP site for this facility:

Actions:

Action Type: RNFE
Action Status: Transmittal, Notice, or Notification Received
Action Date: 10/29/2020
Response Action Outcome: Not reported

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 10/29/2020
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Legal Notice Published
Action Date: 11/16/2021
Response Action Outcome: Not reported

Action Type: Phase 2
Action Status: Scope of Work Received
Action Date: 11/8/2021
Response Action Outcome: Not reported

Action Type: Phase 1
Action Status: Completion Statement Received
Action Date: 11/8/2021
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Tier 2 Classification
Action Date: 11/8/2021
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 11/8/2021
Response Action Outcome: Not reported

Chemicals:

Chemical: Not reported
Quantity: Not reported
Source: UNKNOWN

ASBESTOS:

Name: CAPE COD GATEWAY AIRPORT
Address: 480 BARNSTABLE RD
City,State,Zip: BARNSTABLE, MA
Notification: Not reported
DEP Region: Not reported
Notifiers Name: Not reported
Start Date: 10/13/2022

BARNSTABLE MUNICIPAL AIRPORT (Continued) **U004246631**

End Date:	10/18/2022
Date Entered:	Not reported
Entry Date:	09/29/2022
Quantity Materical Removed SF:	0
Quantity Material Removed LF:	30
Project Description:	OTHER ASBESTOS CAULKING
AR Tracking ID:	399790
Super Lic Number:	AS001078
Monitor Lic Number:	AM000091
Lab Lic Number:	Not reported
Year:	2022
Sticker Number:	100373822
Form Type:	ANF-001
Fee Status:	EXEMPT
Facility Phone:	4018642191
Sub Town:	Not reported
Worksite:	CAPE COD GATEWAY AIRPORT
Occupied:	-1
Contractor:	AC001084
Contract Type:	WRITTEN
Hours:	7:00- 3:30
Project Type:	Renv
Abatement Process:	oth:BARRIERS TAPE//6MIL POLY AND THE FLOOR/COVER W
Location:	OUTDOORS
Decon Process:	TWO CHAMBERS DEACON
Disposal Methods:	WET REMOVAL DOUBLE BAGS 6 MIL POLY
Facility Usage:	AIRPORT
Waiver Given:	Not reported
DEP Waiver Number:	Not reported
DLWD Waiver Number:	Not reported
Small Owner Occ:	-1
Owner Name:	CAPE COD GATEWAY AIRPOT
Owner Address:	480 BARNSTABLE RD
Owner City:	HYANNIS
Owner State:	MA
On Site Manager Name:	KATIE SERVIS
On Site Manager Phone:	5087752020
Ins Comp:	SILVERIO INSURANCE AGENCY
Policy Number:	SILVERIO INSURANCE AGENCY
EXP Date:	3/31/2023
Facility Size:	10000
Transporter Name:	SOLUTION ENVIRONMENTAL CLEANING
Transporter Address:	62 CONGRESS ST
Transporter City:	LAWRENCE
Transporter State:	MA
Final Site:	Not reported
Certified Name:	MAURICIO FERREIRA
Cert Sign Date:	09/29/2022
Certified Company:	MAURICIO FERREIRA
Certified Phone:	9789948734
Entered_by:	SOLUTION

MA Financial Assurance 2:

Name:	BARNSTABLE MUNICIPAL AIRPORT
Address:	480 BARNSTABLE RD
City,State,Zip:	BARNSTABLE, MA 02601
Facility Id:	1114

BARNSTABLE MUNICIPAL AIRPORT (Continued) **U004246631**

Description: Municipal
FR Type: Commercial Insurance

A15 **BARNSTABLE MUNICIPAL AIRPORT - RAC** **MA TIER 2** **S112291267**
Target **480 BARNSTABLE ROAD** **N/A**
Property **HYANNIS, MA 02601**

Site 15 of 17 in cluster A

Actual:
40 ft.

TIER 2:

Name:	BARNSTABLE MUNICIPAL AIRPORT - RAC
Address:	480 BARNSTABLE ROAD
City,State,Zip:	HYANNIS, MA 02601
Report Year:	2019
Facility Id:	FATR2019000000043202
Facility Dept:	Not reported
Latitude:	41.667
Longitude:	-70.2869
Mailing Address:	480 Barnstable Road
Mailing City/State/Zip:	02888
Mailing Country:	USA
Notes:	Not reported
All Chemicals Same As Last Yr:	false
Date Signed:	2020-01-27
Dike Or Other Safeguard:	false
Failed Validation:	Not reported
Date Modified:	07/19/2021
Fees Total:	Not reported
Num Of Employees:	20
Site Coord Abbreviated?:	Not reported
Site Map:	Not reported
State Label Code:	Not reported
Submitted By:	Not reported
Validation Report:	Not reported
Fire District:	Not reported
Latlong Location Description:	Not reported
Latlong Method:	Not reported
Record Key:	FDTR2019000000012812
Id:	006985196
Type:	Dun & Bradstreet
Description:	DUN & BradStreet
Last Modified:	Not reported
Record Key:	FDTR2019000000012813
Id:	532111
Type:	NAICS
Description:	Passenger Car Rental
Last Modified:	Not reported
Record Key:	FDTR2019000000012814
Id:	7514
Type:	SIC
Description:	SIC
Last Modified:	Not reported
Record Key:	FDTR2019000000012815
Id:	9553

BARNSTABLE MUNICIPAL AIRPORT - RAC (Continued) **S112291267**

Type: T2M Facility ID
Description: T2M Facility ID
Last Modified: Not reported

Contact:
Report Year: 2019
Contact Record Id: CTTR2019400032P43202
Title: Not reported
Contact Name: Not reported
Contact Email: Not reported
Contact Mail Address: Not reported
Contact Mail City: Not reported
Contact Mail State: MA
Contact Mail Zip: Not reported
Contact Mail Country: USA
Contact1 Type: Parent Company
Contact2 Type: Not reported
Contact3 Type: Not reported
Contact4 Type: Not reported
Modification Date: Not reported

Contact:
Report Year: 2019
Contact Record Id: CTTR2019400033P43202
Title: Not reported
Contact Name: Blanks
Contact Email: jessica.blanks@hertz.com
Contact Mail Address: 8501 Williams Road
Contact Mail City: Estero
Contact Mail State: FL
Contact Mail Zip: 33928
Contact Mail Country: USA
Contact1 Type: Owner / Operator
Contact2 Type: Not reported
Contact3 Type: Not reported
Contact4 Type: Not reported
Modification Date: Not reported

Contact:
Report Year: 2019
Contact Record Id: CTTR2019400034P43202
Title: Not reported
Contact Name: Not reported
Contact Email: Not reported
Contact Mail Address: Not reported
Contact Mail City: Not reported
Contact Mail State: Not reported
Contact Mail Zip: Not reported
Contact Mail Country: Not reported
Contact1 Type: Billing
Contact2 Type: Not reported
Contact3 Type: Not reported
Contact4 Type: Not reported
Modification Date: Not reported

BARNSTABLE MUNICIPAL AIRPORT - RAC (Continued) **S112291267**

Contact:
Report Year: 2019
Contact Record Id: CTTR2019400036P43202
Title: Not reported
Contact Name: Not reported
Contact Email: jclancy@hertz.com
Contact Mail Address: 480 Barnstable Road
Contact Mail City: Hyannis
Contact Mail State: MA
Contact Mail Zip: 02601
Contact Mail Country: USA
Contact1 Type: Other
Contact2 Type: Not reported
Contact3 Type: Not reported
Contact4 Type: Not reported
Modification Date: Not reported

Contact:
Report Year: 2019
Contact Record Id: CTTR2019400037P43202
Title: Area Manager
Contact Name: Clancy
Contact Email: jclancy@hertz.com
Contact Mail Address: Not reported
Contact Mail City: Not reported
Contact Mail State: Not reported
Contact Mail Zip: Not reported
Contact Mail Country: Not reported
Contact1 Type: Tier II Information Contact
Contact2 Type: Not reported
Contact3 Type: Not reported
Contact4 Type: Not reported
Modification Date: Not reported

Contact:
Report Year: 2019
Contact Record Id: CTTR2019400038P43202
Title: Environmental Compliance Analyst of The Hertz Corp
Contact Name: Blanks
Contact Email: jessica.blanks@hertz.com
Contact Mail Address: Not reported
Contact Mail City: Not reported
Contact Mail State: Not reported
Contact Mail Zip: Not reported
Contact Mail Country: Not reported
Contact1 Type: Emergency Contact
Contact2 Type: Not reported
Contact3 Type: Not reported
Contact4 Type: Not reported
Modification Date: Not reported

Contact:

BARNSTABLE MUNICIPAL AIRPORT - RAC (Continued) **S112291267**

Report Year:	2019
Contact Record Id:	CTTR2019400039P43202
Title:	Distribution Manager
Contact Name:	Cranston
Contact Email:	ncranston@hertz.com
Contact Mail Address:	Not reported
Contact Mail City:	Not reported
Contact Mail State:	Not reported
Contact Mail Zip:	Not reported
Contact Mail Country:	Not reported
Contact1 Type:	Emergency Contact
Contact2 Type:	Not reported
Contact3 Type:	Not reported
Contact4 Type:	Not reported
Modification Date:	Not reported

Chemicals:

Acute:	Not reported
Ave Amount:	19500
Ave Amount Code:	06
Chem Inv Record Id:	CVTR2019000000160620
Chem Same As Last Yr:	false
Chronic:	false
CICAS:	8006619
CI EHS Chemical:	false
CI Last Modified:	2020-01-27
Days On Site:	365
Entered Chemical Name:	Gasoline
Fire:	false
Gas:	false
Liquid:	true
Max Amount:	31500
Max Amount Code:	07
Max Amt Container:	31500
Mixture:	false
Pressure:	false
Pure:	true
Reactive:	false
Solid:	false
State01 Checkbox:	false
State01 Number:	54000
State01 Text:	Not reported
State02 Checkbox:	true
State02 Number:	6
State02 Text:	Year
State03 Checkbox:	false
State03 Number:	36096
State03 Text:	Not reported
State04 Checkbox:	false
State04 Number:	34032
State04 Text:	Liquid
State05 Checkbox:	false
State05 Text:	Not reported
State06 Checkbox:	false
State06 Text:	Not reported
State07 Checkbox:	false

BARNSTABLE MUNICIPAL AIRPORT - RAC (Continued) **S112291267**

State07 Text:	Route 6 east, exit 6 to route 132. Right turn on route 132 and follow signs to Barnstable Airport. Right turn into Hertz wash bay at rental car lot.
State1 Contact Field:	Not reported
State Label Code:	Not reported
Trade Secret:	false

Location:

Record Key:	CLTR201900000S442892
Chem Inv Record Id:	CVTR2019000000160620
Type Code:	Below ground tank
Pressure Code:	Ambient pressure
Temperature Code:	Ambient temperature
Location:	Across the street from main building by the wsh bay
Amount:	31500
Amount Unit:	pounds
Last Modified:	Not reported

Acute:	Not reported
Ave Amount:	19500
Ave Amount Code:	06
Chem Inv Record Id:	CVTR2019000000160620
Chem Same As Last Yr:	false
Chronic:	false
CICAS:	8006619
CI EHS Chemical:	false
CI Last Modified:	2020-01-27
Days On Site:	365
Entered Chemical Name:	Gasoline
Fire:	false
Gas:	false
Liquid:	true
Max Amount:	31500
Max Amount Code:	07
Max Amt Container:	31500
Mixture:	false
Pressure:	false
Pure:	true
Reactive:	false
Solid:	false
State01 Checkbox:	false
State01 Number:	54000
State01 Text:	Not reported
State02 Checkbox:	true
State02 Number:	6
State02 Text:	Year
State03 Checkbox:	false
State03 Number:	36096
State03 Text:	Not reported
State04 Checkbox:	false
State04 Number:	34032
State04 Text:	Liquid
State05 Checkbox:	false
State05 Text:	Not reported
State06 Checkbox:	false
State06 Text:	Not reported
State07 Checkbox:	false

BARNSTABLE MUNICIPAL AIRPORT - RAC (Continued) **S112291267**

State07 Text: Route 6 east, exit 6 to route 132. Right turn on route 132 and follow signs to Barnstable Airport. Right turn into Hertz wash bay at rental car lot.
State1 Contact Field: Not reported
State Label Code: Not reported
Trade Secret: false

Location:
Record Key: CLTR201900000S442892
Chem Inv Record Id: CVTR2019000000160620
Type Code: Below ground tank
Pressure Code: Ambient pressure
Temperature Code: Ambient temperature
Location: Across the street from main building by the wsh bay
Amount: 31500
Amount Unit: pounds
Last Modified: Not reported

A16 **THE HERTZ CORPORATION** **MA TIER 2** **S112291678**
Target Property **480 BARNSTABLE RD** **N/A**
HYANNIS, MA 02601

Site 16 of 17 in cluster A

Actual: 40 ft.

TIER 2:
Name: THE HERTZ CORPORATION
Address: 480 BARNSTABLE RD
City,State,Zip: HYANNIS, MA 02601
Report Year: 2011
Facility Id: FATR20115NB19G0021H0
Facility Dept: Not reported
Latitude: 41.66458
Longitude: -70.28673
Mailing Address: Not reported
Mailing City/State/Zip: Not reported
Mailing Country: Not reported
Notes: Not reported
All Chemicals Same As Last Yr: T
Date Signed: 1/10/2012
Dike Or Other Safeguard: Not reported
Failed Validation: Not reported
Date Modified: 12/05/2012
Fees Total: Not reported
Num Of Employees: 5
Site Coord Abbreviated?: Not reported
Site Map: T
State Label Code: Ma2011
Submitted By: Kevin Brennan, Distro. Mngr.
Validation Report: Not reported

THE HERTZ CORPORATION (Continued) **S112291678**

Fire District: Hyannis
Latlong Location Description: AB - Administrative Building
Latlong Method: A1 - Address Matching (House Number)

Record Key: FDTR20115NB19G0031HF
Id: 7514
Type: SIC
Description: PASSENGER CAR RENTAL
Last Modified: 2/2/2009

Record Key: FDTR20115NB19G0041HF
Id: 006985196
Type: Dun & Bradstreet
Description: Not reported
Last Modified: 2/22/2008

Record Key: FDTR20116APEW10070M9
Id: 532111
Type: NAICS
Description: Car Rental
Last Modified: 2/2/2009

Contact:
Report Year: 2011
Contact Record Id: CTTR2011498PUM004UP4
Title: City Manager
Contact Name: Addams
Contact Email: maddams@hertz.com
Contact Mail Address: 40 Senator Street
Contact Mail City: Warwick
Contact Mail State: RI
Contact Mail Zip: 02888
Contact Mail Country: USA
Contact1 Type: Owner / Operator
Contact2 Type: Emergency Contact
Contact3 Type: Not reported
Contact4 Type: Not reported
Modification Date: 1/17/2012

Contact:
Report Year: 2011
Contact Record Id: CTTR20113KMQUJ001LCK
Title: Distro. Mgr.
Contact Name: Brennan
Contact Email: kbrennan@hertz.com
Contact Mail Address: 40 Senator Street
Contact Mail City: Warwick
Contact Mail State: RI
Contact Mail Zip: 02888
Contact Mail Country: USA
Contact1 Type: Owner / Operator
Contact2 Type: Emergency Contact
Contact3 Type: Not reported
Contact4 Type: Not reported
Modification Date: 1/17/2012

THE HERTZ CORPORATION (Continued) **S112291678**

Contact:

Report Year:	2011
Contact Record Id:	CTTR20116ZUEC5007X9Z
Title:	Hauler
Contact Name:	Noonan
Contact Email:	Not reported
Contact Mail Address:	Not reported
Contact Mail City:	W Bridgewater
Contact Mail State:	MA
Contact Mail Zip:	Not reported
Contact Mail Country:	USA
Contact1 Type:	Emergency Contact
Contact2 Type:	Not reported
Contact3 Type:	Not reported
Contact4 Type:	Not reported
Modification Date:	1/17/2012

A17 **ERNS 2000535475**
Target Property **480 BARNSTABLE RD** **N/A**
HYANNIS, MA

Site 17 of 17 in cluster A

Actual: 40 ft.

Incident Commons:

NRC Report #:	535475
Description of Incident:	RELEASE OF JET FUEL ON ASPHALT BECAUSE SWITCH OF FUEL TRUCK WAS PUT IN WRONG POSITION
Type of Incident:	MOBILE
Incident Cause:	OPERATOR ERROR
Incident Date Time:	2000-07-15 05:00:00
Incident DTG:	OCCURRED
Incident Location:	Not reported
Loaction Address:	480 BARNSTABLE RD
Location Street 1:	2ND FLOOR
Location Street 2:	Not reported
Location Nearest City:	HYANNIS
Location State:	MA
Location County:	BARNSTABLE
Location Zip:	Not reported
Distance From City:	Not reported
Distance Units:	Not reported
Direction From City:	Not reported
Lat Deg:	Not reported
Lat Min:	Not reported
Lat Sec:	Not reported
Lat Quad:	Not reported
Long Deg:	Not reported
Long Min:	Not reported
Long Sec:	Not reported
Long Quad:	Not reported
Location Section:	Not reported
Location Township:	Not reported
Location range:	Not reported
Potential Range:	Not reported

(Continued) **2000535475**

Incidents:

Year:	2000
NRC Report #:	535475
Aircraft Type:	UNKNOWN
Aircraft Model:	Not reported
Aircraft ID:	Not reported
Aircraft Fuel Capacity:	Not reported
Aircraft Fuel Capacity Units:	Not reported
Aircraft Fuel on Board:	Not reported
Aircraft Fuel on Board Units:	Not reported
Aircraft Spot Number:	Not reported
Aircraft Hanger:	Not reported
Aircraft Runway Number:	Not reported
Road Mile Marker:	Not reported
Building ID:	Not reported
Type of Fixed Object:	UNKNOWN
Power Generating Facility:	Not reported
Generating Capacity:	Not reported
Type of Fuel:	Not reported
NPDES:	Not reported
NPDES Compliance:	Not reported
Pipeline Type:	Not reported
DOT Regulated:	Not reported
Pipeline Above Ground:	Not reported
Exposed Underwater:	Not reported
Pipeline Covered:	Not reported
Railroad Hotline:	Not reported
Grade Crossing:	Not reported
Location Subdivision:	Not reported
Railroad Milepost:	Not reported
Type Vehicle Involved:	Not reported
Crossing Device Type:	Not reported
Device Operational:	Not reported
DOT Crossing Number:	Not reported
Brake Failure:	Not reported
Description of Tank:	Not reported
Tank Above Ground:	Not reported
Transportable Container:	Not reported
Tank Regulated:	Not reported
Tank Regulated By:	Not reported
Tank ID:	Not reported
Capacity of Tank:	Not reported
Capacity of Tank Units:	Not reported
Actual Amount:	Not reported
Actual Amount Units:	Not reported
Platform Rig Name:	Not reported
Platform Letter:	Not reported
Location Area ID:	Not reported
Location Block ID:	Not reported
OCSG Number:	Not reported
OCSP Number:	Not reported
State Lease Number:	Not reported
Pier Dock Number:	Not reported
Berth Slip Number:	Not reported
Continuous Release Type:	Not reported
Initial Continuous Release No:	Not reported
Continuous Release Permit:	Not reported

(Continued) **2000535475**

Allision:	Not reported
Type of Structure:	Not reported
Structure Name:	Not reported
Structure Operational:	Not reported
Airbag Deployed:	Not reported
Date Tiem Normal Service:	Not reported
Service Disruption Time:	Not reported
Service Disruption Units:	Not reported
Transit Bus Flag:	Not reported
CR Begin Date:	Not reported
CR End Date:	Not reported
CR Change Date:	Not reported
FBI Contact:	Not reported
FBI Contact Date Time:	Not reported
Sub Part C Testing Req:	XXX
Conductor Testing:	Not reported
Engineer Testing:	Not reported
Trainman Testing:	Not reported
Yard Foreman Testing:	Not reported
RCL Operator Testing:	Not reported
Brakeman Testing:	Not reported
Train Dispatcher Testing:	Not reported
Signalman Testing:	Not reported
Other Employee Testing:	Not reported
Unknown Testing:	Not reported
Passenger Handling:	Not reported
Passenger Route:	XXX
Passenger Delay:	XXX

Incident Details:

Year:	2000
NRC Report #:	535475
Fire Involved:	N
Fire Extinguished:	U
Any Evacuations:	N
Number Evacuated:	Not reported
Who Evacuated:	Not reported
Radius of Evacuation:	Not reported
Any Injuries:	N
Number Injured:	Not reported
Number Hospitalized:	Not reported
Any Fatalities:	N
Number Fatalities:	Not reported
Any Damages:	N
Damage Amount:	Not reported
Air Corridor Closed:	N
Air Corridor Desc:	Not reported
Air Closure Time:	Not reported
Waterway Closed:	N
Waterway Desc:	Not reported
Waterway Closure Time:	Not reported
Road Closed:	N
Road Desc:	Not reported
Road Closure Time:	Not reported
Closure Direction:	Not reported
Major Artery:	N
Track Closed:	N

(Continued) **2000535475**

Track Desc:	Not reported
Track Closure Time:	Not reported
Media Interest:	NONE
Medium Desc:	LAND
Additional Medium Info:	ASPHALT
Body of Water:	Not reported
Tributary of:	Not reported
Release Secured:	U
Estimated Duration of Release:	Not reported
Release rate:	Not reported
Desc Remedial Action:	ABOSRBENT MATERIALS WERE USED TO CLEAN UP SPILL
State Agency on Scene:	Not reported
State Agency Report Number:	Not reported
Other Agency Notified:	Not reported
Weather Conditions:	CLEAR
Air Temperature:	56
Wind Speed:	Not reported
Wind Direction:	Not reported
Water Supply Contaminated:	U
Sheen Size:	Not reported
Sheen Color:	Not reported
Direction of Sheen Travel:	Not reported
Sheen Odor Description:	Not reported
Wave Condition:	Not reported
Current Speed:	Not reported
Current Direction:	Not reported
Water Temperature:	Not reported
Track Close Dir:	Not reported
Empl Fatality:	Not reported
Pass Fatality:	Not reported
Community Impact:	N
Wind Speed Unit:	Not reported
Employee Injuries:	Not reported
Passenger Injuries:	Not reported
Occupant Fatality:	Not reported
Current Speed Unit:	M
Road Closure Units:	Not reported
Track CLosure Units:	Not reported
Sheen Size Units:	Not reported
Additional Info:	Not reported
State Agency Notified:	DEP
Federal Agency Notified:	Not reported
nearest River Mile Marker:	Not reported
Sheen Size Length:	Not reported
Sheen Size Length Units:	Not reported
Sheen Size Width:	Not reported
Sheen Size Width Units:	Not reported
Offshore:	N
Duration Unit:	Not reported
Release Rate Unit:	Not reported
Release Rate Rate:	Not reported
Passengers Transferred:	UNK

Mobile Detail:

Year:	2000
NRC Report #:	535475
Vehicle Number:	44

(Continued) **2000535475**

Trailer Number:	Not reported
Vehicle Own Fuel Capacity:	2000
Cargo Capacity:	Not reported
Amount of Cargo on Board:	Not reported
Hazmat Carrier:	U
Carrier Licensed:	U
Noncompliance With Hazmat:	U
Mobile Type:	OTHER
Cargo Capacity Units:	Not reported
Amount of Cargo on Board Units:	Not reported
Vehicle Year:	Not reported
Vehicle Make:	Not reported
Vehicle Model:	Not reported

Calls:

Year:	2000
NRC Report #:	535475
Site ID:	2000535475
Date Time Received:	2000-07-15 07:46:34
Date Time Complete:	2000-07-15 07:58:31
Call Type:	INC
Responsible Company:	TOWN OF BARNSTABLE- MUNICIPAL AIRPORT
Responsible Org Type:	PRIVATE ENTERPRISE
Responsible City:	HYANNIS
Responsible State:	MA
Responsible Zip:	Not reported
On Behalf:	N
Source:	UNAVAILABLE

Material Involved:

Year:	2000
NRC Report #:	535475
Chris Code:	JPE
Case Number:	000000-00-0
UN Number:	Not reported
Amount of Material:	25
Unit of Measure:	GALLON(S)
Name of Material:	JET FUEL: JP-8
If Reached Water:	NO
Amount in Water:	Not reported
Unit of Measure Reach Water:	Not reported

B18 **HANGAR 2 INC** **RCRA NonGen / NLR** **1000232759**
West **BARNSTABLE MUNICIPAL ARPT** **MAD982546244**
< 1/8 **BARNSTABLE-HYANNIS, MA 02601**
0.056 mi.
297 ft. **Site 1 of 5 in cluster B**

Relative: **Lower**
Actual: **19 ft.**

RCRA Listings:

Date Form Received by Agency:	19880226
Handler Name:	Hangar 2 Inc
Handler Address:	BARNSTABLE MUNICIPAL ARPT
Handler City,State,Zip:	BARNSTABLE-HYANNIS, MA 02601
EPA ID:	MAD982546244
Contact Name:	JOHN-V CONNOLLY
Contact Address:	BARNSTABLE MUNICIPAL ARPT

HANGAR 2 INC (Continued) **1000232759**

Contact City,State,Zip:	HYANNIS, MA 02001
Contact Telephone:	508-771-6669
Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	01
Land Type:	Private
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Ma
State District:	S
Mailing Address:	BARNSTABLE MUNICIPAL ARPT
Mailing City,State,Zip:	HYANNIS, MA 02001
Owner Name:	John V Connolly
Owner Type:	Private
Operator Name:	Hangar 2 Inc
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20171020
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No

HANGAR 2 INC (Continued) **1000232759**

Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Hazardous Waste Summary:
Waste Code: D001
Waste Description: Ignitable Waste

Waste Code: U002
Waste Description: 2-Propanone (I) (Or) Acetone (I)

Waste Code: U159
Waste Description: 2-Butanone (I,T) (Or) Methyl Ethyl Ketone (Mek) (I,T)

Handler - Owner Operator:
Owner/Operator Indicator: Owner
Owner/Operator Name: JOHN V CONNOLLY
Legal Status: Private
Date Became Current: 20041016
Date Ended Current: Not reported
Owner/Operator Address: BARNSTABLE MUNICIPAL ARPT
Owner/Operator City,State,Zip: HYANNIS, MA 02001
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: HANGAR 2 INC
Legal Status: Private
Date Became Current: 19870301
Date Ended Current: 19901130
Owner/Operator Address: BARNSTABLE MUNICIPAL ARPT
Owner/Operator City,State,Zip: HYANNIS, MA 02001
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 19880226
Handler Name: HANGAR 2 INC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Ma
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

HANGAR 2 INC (Continued) **1000232759**

NAICS Codes: No NAICS Codes Found

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

B19 **HYANNIS AIR SERVICE** **RCRA NonGen / NLR** **1000317633**
West **BARNSTABLE MUNICIPAL AIRPORT** **MAD069264125**
< 1/8 **BARNSTABLE-HYANNIS, MA 02601**
0.056 mi.
297 ft. **Site 2 of 5 in cluster B**

Relative:
Lower

Actual:
19 ft.

RCRA Listings:

Date Form Received by Agency:	19861125
Handler Name:	Hyannis Air Service
Handler Address:	BARNSTABLE MUNICIPAL AIRPORT
Handler City,State,Zip:	BARNSTABLE-HYANNIS, MA 02601
EPA ID:	MAD069264125
Contact Name:	ROY HANSEN
Contact Address:	BARNSTABLE MUNICIPAL ARPT
Contact City,State,Zip:	HYANNIS, MA 02601
Contact Telephone:	508-775-8171
Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	01
Land Type:	Private
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Ma
State District:	S
Mailing Address:	BARNSTABLE MUNICIPAL ARPT
Mailing City,State,Zip:	HYANNIS, MA 02601
Owner Name:	Hyannis Aviation Inc
Owner Type:	Private
Operator Name:	Hyannis Air Service
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---

HYANNIS AIR SERVICE (Continued) **1000317633**

Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20171020
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	Ignitable Waste

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name: HYANNIS AIR SERVICE	
Legal Status:	Private
Date Became Current:	19911208
Date Ended Current:	19960729
Owner/Operator Address:	BARNSTABLE MUNICIPAL ARPT
Owner/Operator City,State,Zip:	HYANNIS, MA 02601
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name: HYANNIS AVIATION INC	
Legal Status:	Private
Date Became Current:	20041016
Date Ended Current:	Not reported
Owner/Operator Address:	BARNSTABLE MUNICIPAL ARPT
Owner/Operator City,State,Zip:	HYANNIS, MA 02601
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

HYANNIS AIR SERVICE (Continued) **1000317633**

Historic Generators:
Receive Date: 19861125
Handler Name: HYANNIS AIR SERVICE
Federal Waste Generator Description: Not a generator, verified
State District Owner: Ma
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Codes: No NAICS Codes Found

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

B20 **GULL ARI INC** **RCRA NonGen / NLR** **1000273675**
West **BARNSTABLE MUNICIPAL ARPT** **MAD076618040**
< 1/8 **BARNSTABLE-HYANNIS, MA 02601**
0.056 mi.
297 ft. **Site 3 of 5 in cluster B**

Relative: **Lower**
Actual: **19 ft.**

RCRA Listings:
Date Form Received by Agency: 19860929
Handler Name: Gull Ari Inc
Handler Address: BARNSTABLE MUNICIPAL ARPT
Handler City,State,Zip: BARNSTABLE-HYANNIS, MA 02601
EPA ID: MAD076618040
Contact Name: JIM NELSON
Contact Address: BARNSTABLE MUNICIPAL ARPT
Contact City,State,Zip: HYANNIS, MA 02601
Contact Telephone: 508-771-8586
Contact Fax: Not reported
Contact Email: Not reported
Contact Title: Not reported
EPA Region: 01
Land Type: Private
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Not reported
State District Owner: Ma
State District: S
Mailing Address: BARNSTABLE MUNICIPAL ARPT
Mailing City,State,Zip: HYANNIS, MA 02601
Owner Name: Gull Air Inc
Owner Type: Private

GULL ARI INC (Continued) **1000273675**

Operator Name:	Gull Ari Inc
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20171020
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	Ignitable Waste
Waste Code:	U002
Waste Description:	2-Propanone (I) (Or) Acetone (I)
Waste Code:	U159
Waste Description:	2-Butanone (I,T) (Or) Methyl Ethyl Ketone (Mek) (I,T)

Handler - Owner Operator:

Owner/Operator Indicator:	Operator

GULL ARI INC (Continued) **1000273675**

Owner/Operator Name: GULL ARI INC
Legal Status: Private
Date Became Current: 19900301
Date Ended Current: 19910630
Owner/Operator Address: BARNSTABLE MUNICIPAL ARPT
Owner/Operator City,State,Zip: HYANNIS, MA 02601
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: GULL AIR INC
Legal Status: Private
Date Became Current: 20041016
Date Ended Current: Not reported
Owner/Operator Address: BARNSTABLE MUNICIPAL ARPT
Owner/Operator City,State,Zip: HYANNIS, MA 02601
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 19860929
Handler Name: GULL ARI INC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Ma
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Codes: No NAICS Codes Found

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

B21
West
< 1/8
0.057 mi.
300 ft.

PROVINCETOWN BOSTON AIRLINES
MUNICIPAL ARPT NORTH RAMP
BARNSTABLE-HYANNIS, MA 02601

Site 4 of 5 in cluster B

RCRA NonGen / NLR | **1000433239** | **MAD981211253**

Relative:
Lower

Actual:
19 ft.

RCRA Listings:

Date Form Received by Agency:	19861030
Handler Name:	Provincetown Boston Airlines
Handler Address:	MUNICIPAL ARPT NORTH RAMP
Handler City,State,Zip:	BARNSTABLE-HYANNIS, MA 02601
EPA ID:	MAD981211253
Contact Name:	ALAN SCHANTZEN
Contact Address:	BARNSTABLE MUNICIPAL ARPT
Contact City,State,Zip:	HYANNIS, MA 02601
Contact Telephone:	508-771-8280
Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	01
Land Type:	Private
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Ma
State District:	S
Mailing Address:	BARNSTABLE MUNICIPAL ARPT
Mailing City,State,Zip:	HYANNIS, MA 02601
Owner Name:	Provincetown Boston Airlines
Owner Type:	Private
Operator Name:	Provincetown Boston Airlines
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No

PROVINCETOWN BOSTON AIRLINES (Continued) **1000433239**

Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20171020
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	Ignitable Waste

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	PROVINCETOWN BOSTON AIRLINES
Legal Status:	Private
Date Became Current:	20041016
Date Ended Current:	Not reported
Owner/Operator Address:	BARNSTABLE MUNICIPAL ARPT
Owner/Operator City,State,Zip:	HYANNIS, MA 02601
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	PROVINCETOWN BOSTON AIRLINES
Legal Status:	Private
Date Became Current:	19911208
Date Ended Current:	Not reported
Owner/Operator Address:	BARNSTABLE MUNICIPAL ARPT
Owner/Operator City,State,Zip:	HYANNIS, MA 02601
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	19861030
Handler Name:	PROVINCETOWN BOSTON AIRLINES
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Ma
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No

PROVINCETOWN BOSTON AIRLINES (Continued) **1000433239**

Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Codes: No NAICS Codes Found

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

B22 **TRI AIR FREIGHT INC** **RCRA NonGen / NLR** **1000101433**
WSW **BARNSTABLE ARPT** **MAD981211626**
< 1/8 **BARNSTABLE-HYANNIS, MA 02601**
0.063 mi.
331 ft. **Site 5 of 5 in cluster B**

Relative: **Lower**
Actual: **25 ft.**

RCRA Listings:

Date Form Received by Agency:	19861028
Handler Name:	Tri Air Freight Inc
Handler Address:	BARNSTABLE ARPT
Handler City,State,Zip:	BARNSTABLE-HYANNIS, MA 02601
EPA ID:	MAD981211626
Contact Name:	LOUISE SLOEGM
Contact Address:	BARNSTABLE ARPT
Contact City,State,Zip:	HYANNIS, MA 02601
Contact Telephone:	617-555-1212
Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	01
Land Type:	Private
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Ma
State District:	S
Mailing Address:	BARNSTABLE ARPT
Mailing City,State,Zip:	HYANNIS, MA 02601
Owner Name:	Tri Air Freight Inc
Owner Type:	Private
Operator Name:	Tri Air Freight Inc
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No

TRI AIR FREIGHT INC (Continued) **1000101433**

Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20171020
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	Ignitable Waste

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: TRI AIR FREIGHT INC	
Legal Status:	Private
Date Became Current:	20041016
Date Ended Current:	Not reported
Owner/Operator Address:	BARNSTABLE ARPT
Owner/Operator City,State,Zip:	HYANNIS, MA 02601
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: TRI AIR FREIGHT INC	
Legal Status:	Private
Date Became Current:	19900301
Date Ended Current:	19910630

TRI AIR FREIGHT INC (Continued) **1000101433**

Owner/Operator Address: BARNSTABLE ARPT
Owner/Operator City,State,Zip: HYANNIS, MA 02601
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 19861028
Handler Name: TRI AIR FREIGHT INC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Ma
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Codes: No NAICS Codes Found

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

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23 **HYA - CAPE COD GATEWAY** **PFAS PART 139 AIRPORT** **1027443186**
ESE **N/A**
< 1/8 **HYANNIS, MA**
0.089 mi.
468 ft.

Relative: **Higher**

Actual: **43 ft.**

PFAS PART 139 AIRPORT:
Name: HYA - CAPE COD GATEWAY
City,State,Zip: HYANNIS, MA
Region: 01
Count: 1
Status: Active
Industry: Airports (Part 139)
EJSCREEN Report: https://ejscreen.epa.gov/mapper/mobile/EJSCREEN_mobile.aspx?geometry=%7B%22x%22:-70.280358333333,%22y%22:41.669336111111,%22spatialReference%22:%7B%22wkid%22:4326%7D%7D&unit=9035&areatype=&areaid=&basemap=streets&distance=1
Latitude: 41.669336111
Longitude: -70.280358333

24
South
1/8-1/4
0.156 mi.
823 ft.

BARNSTABLE AIRPORT
BOARDMAN-POLANDO FLD
HYANNIS, MA 02601

MA SHWS **S106513053**
MA RELEASE **N/A**

Relative:
Higher

Actual:
44 ft.

SHWS:

Name:	BARNSTABLE AIRPORT
Address:	BOARDMAN-POLANDO FLD
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0000823
Source Type:	UNKNOWN
Release Town:	BARNSTABLE
Notification Date:	11/10/1989
Category:	NONE
Associated ID:	4-0000823
Current Status:	PSNC
Status Date:	07/10/2020
Phase:	Not reported
Response Action Outcome:	PN
Oil Or Haz Material:	Oil and Hazardous Material

Release:

Name:	BARNSTABLE AIRPORT
Address:	BOARDMAN-POLANDO FLD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0000823 / PSNC
Primary ID:	4-0000823
Official City:	BARNSTABLE
Notification:	11/10/1989
Category:	NONE
Status Date:	07/10/2020
Phase:	Not reported
Response Action Outcome:	PN - PN
Oil / Haz Material Type:	Oil and Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	TREGS
Action Status:	BWSC05
Action Date:	10/11/1994
Response Action Outcome:	PN

Action Type:	Tier Classification
Action Status:	Tier 1B Classification
Action Date:	10/11/1994
Response Action Outcome:	PN

Action Type:	Tier Classification
Action Status:	Permit Effective Date
Action Date:	10/11/1994
Response Action Outcome:	PN

Action Type:	Tier Classification
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	10/11/1994
Response Action Outcome:	PN

BARNSTABLE AIRPORT (Continued) **S106513053**

Action Type: Compliance and Enforcement Action
Action Status: Interim Deadline Letter Issued
Action Date: 10/17/2008
Response Action Outcome: PN

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 10/20/1998
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Level I - Technical Screen Audit
Action Date: 10/24/2018
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 10/3/2013
Response Action Outcome: PN

Action Type: Phase 4
Action Status: Completion Statement Received
Action Date: 10/31/2000
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Level I - Technical Screen Audit
Action Date: 10/31/2013
Response Action Outcome: PN

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 11/10/1989
Response Action Outcome: PN

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 11/10/1989
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Level I - Technical Screen Audit
Action Date: 11/17/2020
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 11/17/2020
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 11/7/2003
Response Action Outcome: PN

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.

BARNSTABLE AIRPORT (Continued) **S106513053**

Action Date: 12/10/1996
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via Tier Classification Submittal
Action Date: 12/18/1996
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 12/18/2008
Response Action Outcome: PN

Action Type: Immediate Response Action
Action Status: Written Plan Received
Action Date: 12/21/1998
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 2/11/2002
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 2/12/2010
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 2/13/2015
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 2/13/2015
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: RMRINT
Action Date: 2/13/2015
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 2/13/2015
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 2/14/2008
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 2/14/2014
Response Action Outcome: PN

BARNSTABLE AIRPORT (Continued) **S106513053**

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 2/15/2011
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 2/15/2013
Response Action Outcome: PN

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 2/16/2005
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 2/16/2006
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 2/16/2007
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 2/16/2009
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 2/16/2017
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 2/16/2017
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 2/16/2018
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 2/18/2016
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 2/18/2016
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: RMRINT

BARNSTABLE AIRPORT (Continued) **S106513053**

Action Date: 2/18/2016
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 2/18/2016
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 2/18/2020
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 2/18/2020
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 2/21/2019
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 2/21/2019
Response Action Outcome: PN

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 2/22/1996
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 2/27/2003
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 2/28/2005
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 2/7/2014
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 2/9/2012
Response Action Outcome: PN

Action Type: PIP
Action Status: Written Plan Received
Action Date: 3/12/2007
Response Action Outcome: PN

BARNSTABLE AIRPORT (Continued) **S106513053**

Action Type: Release Abatement Measure
Action Status: Level I - Technical Screen Audit
Action Date: 3/20/2019
Response Action Outcome: PN

Action Type: Phase 4
Action Status: Written Plan Received
Action Date: 3/23/1999
Response Action Outcome: PN

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 3/23/1999
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 3/23/2004
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via Tier Classification Submittal
Action Date: 4/6/1999
Response Action Outcome: PN

Action Type: RLFA
Action Status: FLDD1A
Action Date: 4/6/2007
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Level I - Technical Screen Audit
Action Date: 4/6/2020
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Level I - Technical Screen Audit
Action Date: 4/7/2017
Response Action Outcome: PN

Action Type: An activity type that is related to an Audit
Action Status: NAFNVD
Action Date: 5/24/2007
Response Action Outcome: PN

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 6/23/1997
Response Action Outcome: PN

Action Type: RLFA
Action Status: FLDRUN
Action Date: 6/26/2012
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Completion Statement Received

BARNSTABLE AIRPORT (Continued) **S106513053**

Action Date: 7/10/2020
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: PSNRCD
Action Date: 7/10/2020
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Completion Statement Received
Action Date: 7/10/2020
Response Action Outcome: PN

Action Type: PIP
Action Status: Public Comment Period Initiated on Submittal
Action Date: 7/10/2020
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 7/18/2002
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 7/6/2001
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 8/11/2009
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 8/14/2006
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 8/14/2014
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: RMRINI
Action Date: 8/14/2014
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 8/14/2014
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 8/14/2014
Response Action Outcome: PN

BARNSTABLE AIRPORT (Continued) **S106513053**

Action Type:	Phase 5
Action Status:	Status or Interim Report Received
Action Date:	8/15/2008
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	8/15/2012
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	8/15/2013
Response Action Outcome:	PN
Action Type:	Release Abatement Measure
Action Status:	Status or Interim Report Received
Action Date:	8/15/2019
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Status or Interim Report Received
Action Date:	8/15/2019
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Status or Interim Report Received
Action Date:	8/16/2007
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	8/18/2010
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Level II - Audit Inspection
Action Date:	8/21/2012
Response Action Outcome:	PN
Action Type:	An activity type that is related to an Audit
Action Status:	NAFNVD
Action Date:	8/21/2012
Response Action Outcome:	PN
Action Type:	Release Abatement Measure
Action Status:	Status or Interim Report Received
Action Date:	8/21/2018
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Status or Interim Report Received
Action Date:	8/21/2018
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Inspection and Monitoring Report Received

BARNSTABLE AIRPORT (Continued) **S106513053**

Action Date: 8/22/2005
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 8/5/2011
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: RMRINT
Action Date: 8/5/2016
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 8/5/2016
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 8/5/2016
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 8/5/2016
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 8/7/2015
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 8/7/2015
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 8/7/2015
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: RMRINT
Action Date: 8/7/2015
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 9/18/2017
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Revised Statement or Transmittal Received
Action Date: 9/29/2020
Response Action Outcome: PN

BARNSTABLE AIRPORT (Continued) **S106513053**

Action Type: Release Abatement Measure
Action Status: Revised Statement or Transmittal Received
Action Date: 9/29/2020
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: PSNREV
Action Date: 9/29/2020
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Level I - Technical Screen Audit
Action Date: 9/30/2016
Response Action Outcome: PN

Chemicals:
Chemical: UNKNOWN CHEMICAL OF TYPE - HAZARDOUS MATERIAL
Quantity: Not reported
Chemical: UNKNOWN CHEMICAL OF TYPE - OIL
Quantity: Not reported
Location Type: COMMERCIAL
Source: UNKNOWN

C25 **NEAR END OF MARY DUNN RD** **MA SHWS S106513156**
NE **6 AIRPORT WAY (REAR)** **MA RELEASE N/A**
1/8-1/4 **HYANNIS, MA 02601**
0.192 mi.
1012 ft. **Site 1 of 3 in cluster C**

Relative: Higher
Actual: 44 ft.

SHWS:
Name: NEAR END OF MARY DUNN RD
Address: 6 AIRPORT WAY (REAR)
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0011270
Source Type: DRUMS
Release Town: BARNSTABLE
Notification Date: 04/06/1995
Category: TWO HR
Associated ID: Not reported
Current Status: RAO
Status Date: 04/08/1996
Phase: Not reported
Response Action Outcome: A2
Oil Or Haz Material: Hazardous Material

Release:
Name: NEAR END OF MARY DUNN RD
Address: 6 AIRPORT WAY (REAR)
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0011270 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 04/06/1995
Category: TWO HR
Status Date: 04/08/1996
Phase: Not reported
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not

NEAR END OF MARY DUNN RD (Continued) **S106513156**

been reduced to background.
Oil / Haz Material Type: Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:

Action Type: RLFA
Action Status: FOLFLD
Action Date: 4/10/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 4/18/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 4/25/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Written Approval of Plan
Action Date: 4/26/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 4/26/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLFLD
Action Date: 4/6/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 4/6/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 4/6/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 4/6/1995

NEAR END OF MARY DUNN RD (Continued) **S106513156**

Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 4/8/1996
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 4/8/1996
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 5/9/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Written Plan Received
Action Date: 6/5/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 6/7/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 8/4/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: MINERAL SPIRITS
Quantity: Not reported
Location Type: COMMERCIAL
Source: DRUMS

C26 **RUSTY'S INC** **MA UST** **U004247703**
NE **55 MARY DUNN RD** **N/A**
1/8-1/4 **BARNSTABLE, MA 02601**
0.205 mi.
1084 ft. **Site 2 of 3 in cluster C**

Relative: Higher
Actual: 46 ft.

UST:

Facility:
Name: RUSTY'S INC
Address: 55 MARY DUNN RD
City,State,Zip: BARNSTABLE, MA 02601
Facility ID: 40814

RUSTY'S INC (Continued) **U004247703**

Owner Id:	8265
Owner:	ESTATE OF WILLIAM J COTTER
Owner Address:	111 POND VIEW DR
Owner City,St,Zip:	BARNSTABLE, MA 02632
Telephone:	Not reported
Description:	Not reported
Facility address 2:	Not reported
Owner address 2:	Not reported
Latitude:	41.66235
Longitude:	-70.27635
Contact name:	Not reported
Contact address1:	Not reported
Contact address2:	Not reported
Contact city:	Not reported
Contact state:	Not reported
Contact zip:	Not reported
Contact email:	Not reported
Update:	2009-02-11 00:00:00
Update by:	Not reported
Fac status:	CLOSED

Tank ID:	1
Tank Status:	**Tank Removed**
Status Date:	07/08/1998
Date Installed:	01/01/1967
Capacity:	1000.00000
Contents:	Gasoline
Tank Usage:	Motor Vehi
Tank Leak Detection:	Not reported
Pipe Leak Detection:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Tank construct:	Single-walled metal tank (cathodic protection required)
Pipe construct:	Single-walled metal (Corrosion protection required)
Ptype:	Not reported
Number of compartment:	Not reported
Pipe install date:	Not reported
Pipe leak install date:	Not reported
Submersible sump:	N
Submersible sump install date:	Not reported
Turbine sump:	N
Turbine sump sensor:	N
Intermediate sump:	N
Intermediate sump sensor:	N
Spill bucket installed date:	Not reported
Spill bucket sensor:	N
Overfill protect install:	Not reported
Overfill protect type:	Not reported
Automatic line leak detect:	Not reported
Tank corrosion type:	Not reported
Leak corrosion type:	Not reported

Tank ID:	2
Tank Status:	**Tank Removed**
Status Date:	07/08/1998

RUSTY'S INC (Continued) **U004247703**

Date Installed: Not reported
Capacity: 1000.00000
Contents: Bulk Heati
Tank Usage: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Latitude: Not reported
Longitude: Not reported
Tank construct: Not reported
Pipe construct: Not reported
Ptype: Not reported
Number of compartment: Not reported
Pipe install date: Not reported
Pipe leak install date: Not reported
Submersible sump: N
Submersible sump install date: Not reported
Turbine sump: N
Turbine sump sensor: N
Intermediate sump: N
Intermediate sump sensor: N
Spill bucket installed date: Not reported
Spill bucket sensor: N
Overfill protect install: Not reported
Overfill protect type: Not reported
Automatic line leak detect: Not reported
Tank corrosion type: Not reported
Leak corrosion type: Not reported

C27 **CAPE FLIGHT** **MA SHWS** **U003185812**
NE **110 MARY DUNN RD** **MA LAST** **N/A**
1/8-1/4 **HYANNIS, MA 02601** **MA RELEASE**
0.211 mi.
1116 ft. **Site 3 of 3 in cluster C**

Relative:
Higher

Actual:
48 ft.

SHWS:
Name: CAPE FLIGHT
Address: 110 MARY DUNN RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0015715
Source Type: VEHICLE
Release Town: BARNSTABLE
Notification Date: 08/30/2000
Category: TWO HR
Associated ID: Not reported
Current Status: RAO
Status Date: 05/10/2002
Phase: Not reported
Response Action Outcome: A1
Oil Or Haz Material: Oil

LAST:
Name: CAPE FLIGHT
Address: 110 MARY DUNN RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0015715 / RAO
Source Type: AST
Release Town: BARNSTABLE

CAPE FLIGHT (Continued) **U003185812**

Notification Date: 08/30/2000
Category: TWO HR
Associated ID: Not reported
Status Date: 05/10/2002
Phase: Not reported
Response Action Outcome: A1 - A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Oil Or Haz Material: Oil

Chemicals:
Chemical: AVIATION FUEL
Quantity: 150 gallons
Location Type: MUNICIPAL
Source: VEHICLE
Source: AST

Actions:
Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 1/26/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Immediate Response Action
Action Status: Written Plan Received
Action Date: 1/26/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 12/26/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Immediate Response Action
Action Status: Level I - Technical Screen Audit
Action Date: 2/1/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 5/10/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 7/3/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: RLFA
Action Status: FLDD1A
Action Date: 8/30/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

CAPE FLIGHT (Continued) **U003185812**

Action Type: RLFA
Action Status: FOLOFF
Action Date: 8/30/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: FLDISS
Action Date: 8/30/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 8/30/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 9/11/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 9/28/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Release:
Name: CAPE FLIGHT
Address: 110 MARY DUNN RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0015715 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 08/30/2000
Category: TWO HR
Status Date: 05/10/2002
Phase: Not reported
Response Action Outcome: A1 - A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:
Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 1/26/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Immediate Response Action

CAPE FLIGHT (Continued) **U003185812**

Action Status: Written Plan Received
Action Date: 1/26/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 12/26/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Immediate Response Action
Action Status: Level I - Technical Screen Audit
Action Date: 2/1/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 5/10/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 7/3/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: RLFA
Action Status: FLDD1A
Action Date: 8/30/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 8/30/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: FLDISS
Action Date: 8/30/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 8/30/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 9/11/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced

CAPE FLIGHT (Continued) **U003185812**

to background or a threat of release has been eliminated.

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 9/28/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Chemicals:
Chemical: AVIATION FUEL
Quantity: 150 gallons
Location Type: MUNICIPAL
Source: VEHICLE
Source: AST

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28 SW 1/4-1/2 0.396 mi. 2093 ft. **HYANNIS AIRPORT** **MA SHWS S111277409**
490 BARNSTABLE ROAD **MA RELEASE N/A**
HYANNIS, MA

Relative: Higher
Actual: 48 ft.

SHWS:
Name: HYANNIS AIRPORT
Address: 490 BARNSTABLE ROAD
City,State,Zip: HYANNIS, MA
Facility ID: 4-0023484
Source Type: Not reported
Release Town: BARNSTABLE
Notification Date: 08/20/2011
Category: TWO HR
Associated ID: Not reported
Current Status: RAO
Status Date: 10/05/2011
Phase: Not reported
Response Action Outcome: A1
Oil Or Haz Material: Not reported

Release:
Name: HYANNIS AIRPORT
Address: 490 BARNSTABLE ROAD
City,State,Zip: HYANNIS, MA
Release Tracking Number/Current Status: 4-0023484 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 08/20/2011
Category: TWO HR
Status Date: 10/05/2011
Phase: Not reported
Response Action Outcome: A1 - A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Oil / Haz Material Type: Not reported

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Response Action Outcome - RAO

HYANNIS AIRPORT (Continued) **S111277409**

Action Status: Level I - Technical Screen Audit
Action Date: 1/10/2012
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: RNFE
Action Status: Transmittal, Notice, or Notification Received
Action Date: 10/5/2011
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 10/5/2011
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 8/20/2011
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 8/20/2011
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 9/16/2011
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Chemicals:
Chemical: AVIATION GAS
Quantity: 15 gallons
Location Type: COMMERCIAL

29
WSW
1/4-1/2
0.399 mi.
2107 ft.

MOTOR VEHICLE GARAGE **MA SHWS S106513109**
16 HINKLEY RD **MA RELEASE N/A**
HYANNIS, MA 02601

Relative: Higher

Actual: 51 ft.

SHWS:
Name: MOTOR VEHICLE GARAGE
Address: 16 HINKLEY RD
City,State,Zip: HYANNIS, MA 02601
Facility ID: 4-0010187
Source Type: VEHICLE
Release Town: BARNSTABLE
Notification Date: 01/06/1994
Category: TWO HR
Associated ID: Not reported
Current Status: RAO

MOTOR VEHICLE GARAGE (Continued) **S106513109**

Status Date: 06/07/1994
Phase: Not reported
Response Action Outcome: A2
Oil Or Haz Material: Oil

Release:
Name: MOTOR VEHICLE GARAGE
Address: 16 HINKLEY RD
City,State,Zip: HYANNIS, MA 02601
Release Tracking Number/Current Status: 4-0010187 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 01/06/1994
Category: TWO HR
Status Date: 06/07/1994
Phase: Not reported
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 1/6/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 1/6/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 1/6/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 1/7/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 1/7/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLFLD
Action Date: 1/7/1994

MOTOR VEHICLE GARAGE (Continued) **S106513109**

Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Fee Received - FMCRA Use Only
Action Date: 11/9/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 3/21/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 6/7/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: GASOLINE
Quantity: 110 gallons
Location Type: COMMERCIAL
Source: VEHICLE

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30 NNE 1/4-1/2 0.428 mi. 2258 ft. **BARNSTABLE WATER TREATMENT PLANT** **MA LAST** **S110526139**
656 MARY DUNNE ROAD **MA RELEASE** **N/A**
BARNSTABLE, MA 20261

Relative: Lower
Actual: 38 ft.

LAST:
Name: BARNSTABLE WATER TREATMENT PLANT
Address: 656 MARY DUNNE ROAD
City,State,Zip: BARNSTABLE, MA 202610000
Release Tracking Number/Current Status: 4-0022824 / RAO
Source Type: AST
Release Town: BARNSTABLE
Notification Date: 08/31/2010
Category: TWO HR
Associated ID: Not reported
Status Date: 12/28/2010
Phase: Not reported
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil Or Haz Material: Hazardous Material

Chemicals:
Chemical: PROPANE
Quantity: 316 gallons
Location Type: MUNICIPAL
Source: AST

Actions:
Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit

BARNSTABLE WATER TREATMENT PLANT (Continued) **S110526139**

Action Date:	1/28/2011
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	RNFE
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	10/26/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	12/28/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Immediate Response Action
Action Status:	Oral Approval of Plan or Action
Action Date:	8/31/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	8/31/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	RLFA
Action Status:	FLDD1A
Action Date:	9/1/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	9/29/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Release:

Name:	BARNSTABLE WATER TREATMENT PLANT
Address:	656 MARY DUNNE ROAD
City,State,Zip:	BARNSTABLE, MA 202610000
Release Tracking Number/Current Status:	4-0022824 / RAO
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	08/31/2010
Category:	TWO HR
Status Date:	12/28/2010
Phase:	Not reported
Response Action Outcome:	A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type:	Hazardous Material

BARNSTABLE WATER TREATMENT PLANT (Continued) **S110526139**

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	1/28/2011
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	RNFE
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	10/26/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	12/28/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Immediate Response Action
Action Status:	Oral Approval of Plan or Action
Action Date:	8/31/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	8/31/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	RLFA
Action Status:	FLDD1A
Action Date:	9/1/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	9/29/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:

Chemical:	PROPANE
Quantity:	316 gallons
Location Type:	MUNICIPAL
Source:	AST

D31 SHELL STATION **MA LUST S102088056**
WSW AIRPORT ROTARY **MA RELEASE N/A**
1/4-1/2 HYANNIS, MA 02601
0.463 mi.
2446 ft. **Site 1 of 3 in cluster D**

Relative: Higher

Actual: 50 ft.

LUST:

Facility:

Name:	SHELL STATION
Address:	AIRPORT ROTARY
City,State,Zip:	HYANNIS, MA 026010000
Current Status:	**Response Action Outcome**
Release Tracking Number/Current Status:	4-0010573 / RAO
Status Date:	10/17/1994
Source Type:	UST
Release Town:	BARNSTABLE
Notification Date:	06/23/1994
Category:	72 HR
Associated ID:	Not reported
Phase:	Not reported
Response Action Outcome:	A1 - A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Oil Or Haz Material:	Oil
Location Type:	COMMERCIAL
Source:	UST

Click here to access the MA DEP site for this facility:

Chemicals:

Chemical:	TPH
Quantity:	60 parts per million
Chemical:	GASOLINE
Quantity:	64 parts per million

Actions:

Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	10/17/1994
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	Immediate Response Action
Action Status:	Oral Approval of Plan or Action
Action Date:	6/23/1994
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	6/23/1994
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	6/27/1994

SHELL STATION (Continued) **S102088056**

Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 7/6/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Immediate Response Action
Action Status: Written Plan Received
Action Date: 8/22/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Release:
Name: SHELL STATION
Address: AIRPORT ROTARY
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0010573 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 06/23/1994
Category: 72 HR
Status Date: 10/17/1994
Phase: Not reported
Response Action Outcome: A1 - A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 10/17/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 6/23/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 6/23/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 6/27/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced

SHELL STATION (Continued) **S102088056**

to background or a threat of release has been eliminated.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 7/6/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Immediate Response Action
Action Status: Written Plan Received
Action Date: 8/22/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Chemicals:
Chemical: TPH
Quantity: 60 parts per million
Chemical: GASOLINE
Quantity: 64 parts per million
Location Type: COMMERCIAL
Source: UST

E32 **BAP AIRPORT HANGER I** **MA SHWS** **S103812423**
SE **BOARDMAN-POLANDO FLD** **MA RELEASE** **N/A**
1/4-1/2 **BARNSTABLE, MA 02630**
0.466 mi.
2459 ft. **Site 1 of 2 in cluster E**

Relative: Higher
Actual: 45 ft.

SHWS:
Name: BAP AIRPORT HANGER I
Address: BOARDMAN-POLANDO FLD
City,State,Zip: BARNSTABLE, MA 026300000
Facility ID: 4-0012048
Source Type: Not reported
Release Town: BARNSTABLE
Notification Date: 04/29/1996
Category: 120 DY
Associated ID: Not reported
Current Status: RAONR
Status Date: 04/06/1999
Phase: Not reported
Response Action Outcome: Not reported
Oil Or Haz Material: Hazardous Material

Release:
Name: BAP AIRPORT HANGER I
Address: BOARDMAN-POLANDO FLD
City,State,Zip: BARNSTABLE, MA 026300000
Release Tracking Number/Current Status: 4-0012048 / RAONR
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 04/29/1996
Category: 120 DY
Status Date: 04/06/1999
Phase: Not reported
Response Action Outcome: -
Oil / Haz Material Type: Hazardous Material

BAP AIRPORT HANGER I (Continued) **S103812423**

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Tier Classification
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	10/11/1994
Response Action Outcome:	Not reported

Action Type:	Tier Classification
Action Status:	Permit Effective Date
Action Date:	10/11/1994
Response Action Outcome:	Not reported

Action Type:	Tier Classification
Action Status:	Tier 1B Classification
Action Date:	10/11/1994
Response Action Outcome:	Not reported

Action Type:	Downgradient Property Status
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	10/29/1997
Response Action Outcome:	Not reported

Action Type:	Tier Classification
Action Status:	RTN Linked to TCLASS Via Tier Classification Submittal
Action Date:	12/18/1996
Response Action Outcome:	Not reported

Action Type:	Tier Classification
Action Status:	Permit Effective Date
Action Date:	4/29/1996
Response Action Outcome:	Not reported

Action Type:	Tier Classification
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	4/29/1996
Response Action Outcome:	Not reported

Action Type:	TREGS
Action Status:	BWSC05
Action Date:	4/29/1996
Response Action Outcome:	Not reported

Action Type:	Tier Classification
Action Status:	Tier 1B Classification
Action Date:	4/29/1996
Response Action Outcome:	Not reported

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	4/29/1996
Response Action Outcome:	Not reported

Action Type:	Tier Classification
Action Status:	RTN Linked to TCLASS Via Tier Classification Submittal
Action Date:	4/6/1999
Response Action Outcome:	Not reported

BAP AIRPORT HANGER I (Continued) **S103812423**

Action Type: RAO Not Required
Action Status: Linked to a Tier Classified Site
Action Date: 4/6/1999
Response Action Outcome: Not reported

Chemicals:
Chemical: BENZENE
Quantity: 7 parts per billion
Chemical: TETRACHLOROETHYLENE
Quantity: 98 parts per billion
Location Type: MUNICIPAL

E33 **BARNSTABLE MUNICIPAL AIRPORT** **MA SHWS** **S106513203**
SE **EAST RAMP** **MA RELEASE** **N/A**
1/4-1/2 **HYANNIS, MA 02601**
0.466 mi.
2459 ft. **Site 2 of 2 in cluster E**

Relative:
Higher

Actual:
45 ft.

SHWS:
Name: BARNSTABLE MUNICIPAL AIRPORT
Address: EAST RAMP
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0012687
Source Type: Not reported
Release Town: BARNSTABLE
Notification Date: 12/02/1996
Category: 120 DY
Associated ID: Not reported
Current Status: RAONR
Status Date: 04/06/1999
Phase: Not reported
Response Action Outcome: Not reported
Oil Or Haz Material: Hazardous Material

Release:
Name: BARNSTABLE MUNICIPAL AIRPORT
Address: EAST RAMP
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0012687 / RAONR
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 12/02/1996
Category: 120 DY
Status Date: 04/06/1999
Phase: Not reported
Response Action Outcome: -
Oil / Haz Material Type: Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 10/11/1994
Response Action Outcome: Not reported

BARNSTABLE MUNICIPAL AIRPORT (Continued) **S106513203**

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 10/11/1994
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Tier 1B Classification
Action Date: 10/11/1994
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via Tier Classification Submittal
Action Date: 12/18/1996
Response Action Outcome: Not reported

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 12/2/1996
Response Action Outcome: Not reported

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 12/2/1996
Response Action Outcome: Not reported

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 12/2/1996
Response Action Outcome: Not reported

Action Type: Release Abatement Measure
Action Status: Fee Received - FMCRA Use Only
Action Date: 12/3/1996
Response Action Outcome: Not reported

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 4/14/1997
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via Tier Classification Submittal
Action Date: 4/6/1999
Response Action Outcome: Not reported

Action Type: RAO Not Required
Action Status: Linked to a Tier Classified Site
Action Date: 4/6/1999
Response Action Outcome: Not reported

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 7/27/1998
Response Action Outcome: Not reported

Chemicals:
Chemical: KEROSENE

BARNSTABLE MUNICIPAL AIRPORT (Continued) **S106513203**

Quantity: 20000 parts per million

D34 **SHELL SERVICE STA** **MA SHWS** **U003531076**
WSW **590 IYANOUGH RD** **MA LUST** **N/A**
1/4-1/2 **HYANNIS, MA 02601** **MA RELEASE**
0.477 mi.
2518 ft. **Site 2 of 3 in cluster D**

Relative:
Higher

Actual:
50 ft.

SHWS:

Name:	SHELL SERVICE STA
Address:	590 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0017651
Source Type:	UNKNOWN
Release Town:	BARNSTABLE
Notification Date:	02/11/2003
Category:	72 HR
Associated ID:	Not reported
Current Status:	RAO
Status Date:	12/12/2008
Phase:	PHASE V
Response Action Outcome:	A2
Oil Or Haz Material:	Oil

LUST:

Facility:

Name:	SHELL SERVICE STATION
Address:	590 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Current Status:	**Response Action Outcome**
Release Tracking Number/Current Status:	4-0000793 / RAO
Status Date:	11/13/1996
Source Type:	UST
Release Town:	BARNSTABLE
Notification Date:	10/15/1989
Category:	NONE
Associated ID:	Not reported
Phase:	Not reported
Response Action Outcome:	B1 - Remedial actions have not been conducted because a level of No Significant Risk exists.
Oil Or Haz Material:	Oil
Location Type:	GASSTATION
Location Type:	COMMERCIAL
Source:	UST

Click here to access the MA DEP site for this facility:

Chemicals:

Chemical:	GASOLINE
Quantity:	Not reported

Actions:

Action Type:	Release Disposition
Action Status:	Valid Transition Site

SHELL SERVICE STA (Continued) **U003531076**

Action Date: 10/15/1989
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 11/13/1996
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: Tier Classification
Action Status: Tier 1B Classification
Action Date: 11/8/1994
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 11/8/1994
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: TREGS
Action Status: BWSC05
Action Date: 11/8/1994
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 11/8/1994
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: RLFA
Action Status: FLDRUN
Action Date: 4/19/1996
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 8/8/1990
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Release:
Name: SHELL SERVICE STATION
Address: 590 IYANOUGH RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0000793 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 10/15/1989
Category: NONE
Status Date: 11/13/1996

SHELL SERVICE STA (Continued) **U003531076**

Phase: Not reported
Response Action Outcome: B1 - Remedial actions have not been conducted because a level of No Significant Risk exists.
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 10/15/1989
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 11/13/1996
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: Tier Classification
Action Status: Tier 1B Classification
Action Date: 11/8/1994
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 11/8/1994
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: TREGS
Action Status: BWSC05
Action Date: 11/8/1994
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 11/8/1994
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: RLFA
Action Status: FLDRUN
Action Date: 4/19/1996
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 8/8/1990
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

SHELL SERVICE STA (Continued) **U003531076**

Chemicals:

Chemical:	GASOLINE
Quantity:	Not reported
Location Type:	GASSTATION
Location Type:	COMMERCIAL
Source:	UST
Name:	SHELL SERVICE STA
Address:	590 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0017651 / RAO
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	02/11/2003
Category:	72 HR
Status Date:	12/12/2008
Phase:	PHASE V
Response Action Outcome:	A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type:	Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	1/9/2009
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Tier Classification
Action Status:	LSP of Record Change via Minor Permit Mod
Action Date:	10/2/2006
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Release Abatement Measure
Action Status:	Completion Statement Received
Action Date:	10/8/2003
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	12/12/2007
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	12/12/2007
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received

SHELL SERVICE STA (Continued) **U003531076**

Action Date: 12/12/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 12/14/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 12/14/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 4
Action Status: Written Plan Received
Action Date: 12/14/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 12/22/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 2
Action Status: Scope of Work Received
Action Date: 12/22/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Tier 1C Classification
Action Date: 12/22/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 12/22/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 1
Action Status: Completion Statement Received
Action Date: 12/22/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 12/22/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

SHELL SERVICE STA (Continued) **U003531076**

Action Type: Release Abatement Measure
Action Status: Completion Statement Received
Action Date: 12/3/2004
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 2/11/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 2/11/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 2/24/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 3/11/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 3/18/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Written Plan Received
Action Date: 3/27/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Level I - Technical Screen Audit
Action Date: 3/31/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 6/11/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: RMRINT
Action Date: 6/11/2008

SHELL SERVICE STA (Continued) **U003531076**

Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 6/12/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure
Action Status: Fee Received - FMCRA Use Only
Action Date: 6/17/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure
Action Status: Level I - Technical Screen Audit
Action Date: 6/17/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure
Action Status: Written Approval of Plan
Action Date: 6/17/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 6/19/2007
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: RMRINT
Action Date: 6/19/2007
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 6/24/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 6/28/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 9/21/2004
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

SHELL SERVICE STA (Continued) **U003531076**

Action Type: BWS03
Action Status: APPROV
Action Date: Not reported
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: C5 THRU C8 ALIPHATIC HYDROCARBONS
Quantity: 1820 parts per billion
Chemical: C9 THRU C12 ALIPHATIC HYDROCARBONS
Quantity: 1300 parts per billion
Chemical: C9 THRU C10 AROMATIC HYDROCARBONS
Quantity: 2780 parts per billion
Location Type: COMMERCIAL
Source: UNKNOWN

D35 **SHELL STATION #137772** **MA SHWS S106513476**
WSW **590 IYANNOUGH RD** **MA RELEASE N/A**
1/4-1/2 **HYANNIS, MA 02601** **MA HW GEN**
0.477 mi.
2518 ft. **Site 3 of 3 in cluster D**

Relative:
Higher

Actual:
50 ft.

SHWS:
Name: SHELL STATION #137772
Address: 590 IYANNOUGH RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0018156
Source Type: Not reported
Release Town: BARNSTABLE
Notification Date: 11/24/2003
Category: 120 DY
Associated ID: Not reported
Current Status: RAO
Status Date: 03/16/2004
Phase: Not reported
Response Action Outcome: A1
Oil Or Haz Material: Oil

Release:
Name: SHELL STATION #137772
Address: 590 IYANNOUGH RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0018156 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 11/24/2003
Category: 120 DY
Status Date: 03/16/2004
Phase: Not reported
Response Action Outcome: A1 - A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:

SHELL STATION #137772 (Continued) **S106513476**

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 1/16/2004
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 11/24/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 11/24/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Release Abatement Measure
Action Status: Fee Received - FMCRA Use Only
Action Date: 2/13/2004
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 3/16/2004
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Chemicals:
Chemical: C11 THRU C22 AROMATIC HYDROCARBONS
Quantity: 502 parts per million

HW GEN:
Name: BJS WHOLESALE CLUB 321 OSGS
Address: 590 IYANNOUGH RD
City,State,Zip: HYANNIS, MA 02601
EPA Id: MAD981892490
RCRA Generator Status: SQG
State Generator Status: SQG-MA

36
SSW
1/4-1/2
0.485 mi.
2563 ft.

POLE DOWN -TRANSFORMER FELL **MA SHWS S112195313**
395 BARNSTABLE ROAD **MA RELEASE N/A**
HYANNIS, MA 02601

Relative: Higher

Actual: 47 ft.

SHWS:
Name: POLE DOWN -TRANSFORMER FELL
Address: 395 BARNSTABLE ROAD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0024153
Source Type: TRANSFORM
Release Town: BARNSTABLE
Notification Date: 08/27/2012
Category: TWO HR

POLE DOWN -TRANSFORMER FELL (Continued) **S112195313**

Associated ID: Not reported
Current Status: RAO
Status Date: 09/04/2012
Phase: Not reported
Response Action Outcome: A1
Oil Or Haz Material: Not reported

Release:
Name: POLE DOWN -TRANSFORMER FELL
Address: 395 BARNSTABLE ROAD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0024153 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 08/27/2012
Category: TWO HR
Status Date: 09/04/2012
Phase: Not reported
Response Action Outcome: A1 - A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Oil / Haz Material Type: Not reported

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 8/27/2012
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 8/31/2012
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 9/4/2012
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: RNFE
Action Status: Transmittal, Notice, or Notification Received
Action Date: 9/4/2012
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Chemicals:
Chemical: TRANSFORMER OIL - NON PCB
Quantity: 30 gallons
Location Type: ROADWAY
Source: TRANSFORM

37
WSW
1/4-1/2
0.492 mi.
2596 ft.

BOUY S REALTY BDP
599 IYANOUGH RD
HYANNIS, MA 02601

MA SHWS **S106513040**
MA RELEASE **N/A**

Relative:
Higher

Actual:
51 ft.

SHWS:

Name:	BOUY S REALTY BDP
Address:	599 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 02601
Facility ID:	4-0000461
Source Type:	Not reported
Release Town:	BARNSTABLE
Notification Date:	01/15/1988
Category:	NONE
Associated ID:	Not reported
Current Status:	DEPNDS
Status Date:	07/23/1993
Phase:	Not reported
Response Action Outcome:	Not reported
Oil Or Haz Material:	Not reported

Release:

Name:	BOUY S REALTY BDP
Address:	599 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 02601
Release Tracking Number/Current Status:	4-0000461 / DEPNDS
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	01/15/1988
Category:	NONE
Status Date:	07/23/1993
Phase:	Not reported
Response Action Outcome:	-
Oil / Haz Material Type:	Not reported

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Release Disposition
Action Status:	Valid Transition Site
Action Date:	1/15/1988
Response Action Outcome:	Not reported

Action Type:	TREGS
Action Status:	DEPNDS
Action Date:	7/23/1993
Response Action Outcome:	Not reported

Chemicals:

Chemical:	UNKNOWN
Quantity:	Not reported

F38 **CAPE FLIGHT AREA** **MA SHWS** **S106513301**
West **BARNSTABLE MUNICIPAL AIRPORT** **MA RELEASE** **N/A**
1/2-1 **HYANNIS, MA 02601**
0.503 mi.
2658 ft. **Site 1 of 2 in cluster F**

Relative:
Higher

Actual:
53 ft.

SHWS:

Name:	CAPE FLIGHT AREA
Address:	BARNSTABLE MUNICIPAL AIRPORT
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0014860
Source Type:	PIPE
Release Town:	BARNSTABLE
Notification Date:	07/14/1999
Category:	TWO HR
Associated ID:	Not reported
Current Status:	RAO
Status Date:	07/14/1999
Phase:	Not reported
Response Action Outcome:	A2
Oil Or Haz Material:	Oil

Release:

Name:	CAPE FLIGHT AREA
Address:	BARNSTABLE MUNICIPAL AIRPORT
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0014860 / RAO
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	07/14/1999
Category:	TWO HR
Status Date:	07/14/1999
Phase:	Not reported
Response Action Outcome:	A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type:	Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	7/14/1999
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	7/14/1999
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Immediate Response Action
Action Status:	Oral Approval of Plan or Action
Action Date:	7/14/1999
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

CAPE FLIGHT AREA (Continued) **S106513301**

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 7/20/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 7/29/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 8/19/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 8/5/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Revised Statement or Transmittal Received
Action Date: 9/14/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: AVIATION FUEL
Quantity: 20 gallons
Location Type: COMMERCIAL
Source: PIPE

F39 **GRIFFIN AVIONICS** **MA SHWS S111739448**
West **BARNSTABLE AIRPORT** **MA RELEASE N/A**
1/2-1 **HYANNIS, MA 02601**
0.503 mi.
2658 ft. **Site 2 of 2 in cluster F**

Relative: **Higher**
Actual: **53 ft.**

SHWS:
Name: GRIFFIN AVIONICS
Address: BARNSTABLE AIRPORT
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0012911
Source Type: Not reported
Release Town: BARNSTABLE
Notification Date: 03/20/1997
Category: 120 DY
Associated ID: Not reported
Current Status: RAONR
Status Date: 08/24/2000
Phase: PHASE III
Response Action Outcome: Not reported
Oil Or Haz Material: Oil and Hazardous Material

GRIFFIN AVIONICS (Continued) **S111739448**

Release:

Name:	GRIFFIN AVIONICS
Address:	BARNSTABLE AIRPORT
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0012911 / RAONR
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	03/20/1997
Category:	120 DY
Status Date:	08/24/2000
Phase:	PHASE III
Response Action Outcome:	-
Oil / Haz Material Type:	Oil and Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Phase 2
Action Status:	Completion Statement Received
Action Date:	1/29/1998
Response Action Outcome:	Not reported

Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	12/10/1996
Response Action Outcome:	Not reported

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	12/10/1996
Response Action Outcome:	Not reported

Action Type:	Tier Classification
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	3/24/1998
Response Action Outcome:	Not reported

Action Type:	Phase 1
Action Status:	Completion Statement Received
Action Date:	3/24/1998
Response Action Outcome:	Not reported

Action Type:	Tier Classification
Action Status:	Tier 1C Classification
Action Date:	3/24/1998
Response Action Outcome:	Not reported

Action Type:	RAO Not Required
Action Status:	Linked to a Tier Classified Site
Action Date:	8/24/2000
Response Action Outcome:	Not reported

Action Type:	Phase 2
Action Status:	Scope of Work Received
Action Date:	9/4/1998
Response Action Outcome:	Not reported

GRIFFIN AVIONICS (Continued) **S111739448**

Action Type: BWS03
Action Status: APPROV
Action Date: Not reported
Response Action Outcome: Not reported

Chemicals:
Chemical: TPH
Quantity: Not reported
Chemical: CADMIUM
Quantity: Not reported
Location Type: MUNICIPAL

---

40 **HYANNIS AIRPORT** **MA SHWS** **S127590313**
SSE **125 MARY DUNN WAY** **MA RELEASE** **N/A**
1/2-1 **BARNSTABLE, MA 02601**
0.514 mi.
2712 ft.

Relative:
Higher

Actual:
40 ft.

SHWS:
Name: HYANNIS AIRPORT
Address: 125 MARY DUNN WAY
City,State,Zip: BARNSTABLE, MA 026010000
Facility ID: 4-0028769
Source Type: FUELTANK
Release Town: BARNSTABLE
Notification Date: 04/26/2021
Category: TWO HR
Associated ID: Not reported
Current Status: PSNC
Status Date: 06/24/2021
Phase: Not reported
Response Action Outcome: PN
Oil Or Haz Material: Not reported

Release:
Name: HYANNIS AIRPORT
Address: 125 MARY DUNN WAY
City,State,Zip: BARNSTABLE, MA 026010000
Release Tracking Number/Current Status: 4-0028769 / PSNC
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 04/26/2021
Category: TWO HR
Status Date: 06/24/2021
Phase: Not reported
Response Action Outcome: PN - PN
Oil / Haz Material Type: Not reported

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 4/26/2021
Response Action Outcome: PN

HYANNIS AIRPORT (Continued) **S127590313**

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 4/27/2021
Response Action Outcome: PN

Action Type: BOL
Action Status: Transmittal, Notice, or Notification Received
Action Date: 5/19/2021
Response Action Outcome: PN

Action Type: BOL
Action Status: SHPFAC
Action Date: 6/15/2021
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: PSNRCD
Action Date: 6/24/2021
Response Action Outcome: PN

Action Type: RNFE
Action Status: Transmittal, Notice, or Notification Received
Action Date: 6/24/2021
Response Action Outcome: PN

Chemicals:
Chemical: Not reported
Quantity: Not reported
Location Type: AIRPORT
Location Type: MUNICIPAL
Source: FUELTANK

41
SW
1/2-1
0.514 mi.
2713 ft.

TRANSATLANTIC MOTORS
25 FALMOUTH RD
HYANNIS, MA 02601

MA SHWS **U003531067**
MA RELEASE **N/A**
MA ASBESTOS
MA HW GEN
MA UIC

Relative:
Higher

Actual:
49 ft.

SHWS:
Name: TRANSATLANTIC MOTORS
Address: 25 FALMOUTH RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0013433
Source Type: VEHICLE
Release Town: BARNSTABLE
Notification Date: 10/16/1997
Category: TWO HR
Associated ID: Not reported
Current Status: RAO
Status Date: 12/12/1997
Phase: Not reported
Response Action Outcome: A1
Oil Or Haz Material: Oil

Release:
Name: TRANSATLANTIC MOTORS
Address: 25 FALMOUTH RD

TRANSATLANTIC MOTORS (Continued) **U003531067**

City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0013433 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 10/16/1997
Category: TWO HR
Status Date: 12/12/1997
Phase: Not reported
Response Action Outcome: A1 - A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 10/16/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 10/27/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 12/12/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 12/12/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 12/12/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Chemicals:

Chemical: WASTE OIL
Quantity: 20 gallons
Location Type: COMMERCIAL
Source: VEHICLE

ASBESTOS:

Name: PREMIER AUDI OF CAPE COD
Address: 25 FALMOUTH ROAD
City,State,Zip: HYANNIS, MA 02601
Notification: 100220339R1

TRANSATLANTIC MOTORS (Continued) **U003531067**

DEP Region:	SE
Notifiers Name:	SOUTHERN MIDDLESEX INDUSTRIES INC
Start Date:	05/15/2015
End Date:	05/18/2015
Date Entered:	13/05/2015
Entry Date:	05/13/2015
Quantity Materical Removed SF:	0
Quantity Material Removed LF:	70
Project Description:	TRANSPIPE
AR Tracking ID:	Not reported
Super Lic Number:	Not reported
Monitor Lic Number:	Not reported
Lab Lic Number:	Not reported
Year:	2015
Sticker Number:	Not reported
Form Type:	Not reported
Fee Status:	Not reported
Facility Phone:	Not reported
Sub Town:	Not reported
Worksite:	Not reported
Occupied:	Not reported
Contractor:	Not reported
Contract Type:	Not reported
Hours:	Not reported
Project Type:	Not reported
Abatement Process:	Not reported
Location:	Not reported
Decon Process:	Not reported
Disposal Methods:	Not reported
Facility Usage:	Not reported
Waiver Given:	Not reported
DEP Waiver Number:	Not reported
DLWD Waiver Number:	Not reported
Small Owner Occ:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City:	Not reported
Owner State:	Not reported
On Site Manager Name:	Not reported
On Site Manager Phone:	Not reported
Ins Comp:	Not reported
Policy Number:	Not reported
EXP Date:	Not reported
Facility Size:	Not reported
Transporter Name:	Not reported
Transporter Address:	Not reported
Transporter City:	Not reported
Transporter State:	Not reported
Final Site:	Not reported
Certified Name:	Not reported
Cert Sign Date:	Not reported
Certified Company:	Not reported
Certified Phone:	Not reported
Entered_by:	Not reported

HW GEN:
Name: AUDI OF CAPE COD

TRANSATLANTIC MOTORS (Continued) **U003531067**

Address: 25 FALMOUTH RD
City,State,Zip: HYANNIS, MA 02601
EPA Id: MAC300102415
RCRA Generator Status: VSQG
State Generator Status: LQG-MA

UIC:
RTN Number: Not reported
Name: TRANS-ATLANTIC MOTORS
Address: 25 FALMOUTH ROAD
City,State,Zip: HYANNIS, MA 02601
Permit Date: Not reported
Actor Name: Not reported
Air Sparging: Not reported
Injection Well: Not reported
ReInjection Well: Not reported
UIC APL Type: WS-06d
Latitude: Not reported
Well Status: Not reported
Longitude: Not reported
UIC ID: Not reported
EPA Code: Not reported
Indicates Area: Not reported
Number of Wells: Not reported
Owner: AL KRISCIUNAS
Receive Date: Not reported
Authorization to Install/Close Date: Not reported
Confirmation of Install Receive: Not reported
Post-Closure Receive: 05/09/1997
Final Approval Date: Not reported
Permit Number: Not reported
Permit Type: Not reported
Permit Type Description: Not reported
Program: Not reported
Applicant Name: Not reported
Decision Date: Not reported
Operator Name: Not reported
Well ID: Not reported
Well Type Name: Not reported
Max Well Depth: Not reported
Date Complete: Not reported
Work Performed: Not reported
Depth to Bedrock: Not reported
Water Level: Not reported

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42 WNW 1/2-1 0.551 mi. 2908 ft. **RAY BLACKBURN AUTO SALVAGE BAP** **MA SHWS S106513069**
AIRPORT RD **MA RELEASE N/A**
HYANNIS, MA 02601

Relative: Higher
Actual: 48 ft.

SHWS:
Name: RAY BLACKBURN AUTO SALVAGE BAP
Address: AIRPORT RD
City,State,Zip: HYANNIS, MA 02601
Facility ID: 4-0001081
Source Type: UNKNOWN

RAY BLACKBURN AUTO SALVAGE BAP (Continued) **S106513069**

Release Town:	BARNSTABLE
Notification Date:	07/15/1991
Category:	NONE
Associated ID:	Not reported
Current Status:	RAO
Status Date:	11/07/2008
Phase:	Not reported
Response Action Outcome:	A2
Oil Or Haz Material:	Oil

Release:

Name:	RAY BLACKBURN AUTO SALVAGE BAP
Address:	AIRPORT RD
City,State,Zip:	HYANNIS, MA 02601
Release Tracking Number/Current Status:	4-0001081 / RAO
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	07/15/1991
Category:	NONE
Status Date:	11/07/2008
Phase:	Not reported
Response Action Outcome:	A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type:	Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Release Abatement Measure
Action Status:	Completion Statement Received
Action Date:	11/7/2008
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	11/7/2008
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	12/24/2008
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Compliance and Enforcement Action
Action Status:	Notice of Non-Compliance Issued
Action Date:	3/3/2005
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Phase 2
Action Status:	Scope of Work Received
Action Date:	4/27/2001
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been

RAY BLACKBURN AUTO SALVAGE BAP (Continued) **S106513069**

reduced to background.

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 4/28/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Compliance and Enforcement Action
Action Status: Interim Deadline Letter Issued
Action Date: 6/15/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FLDRUN
Action Date: 6/30/2009
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 6/4/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FLDRUN
Action Date: 6/5/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 7/15/1991
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 8/22/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 1
Action Status: Completion Statement Received
Action Date: 8/22/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Tier 1C Classification
Action Date: 8/22/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: BWS03

RAY BLACKBURN AUTO SALVAGE BAP (Continued) **S106513069**

Action Status:	APPROV
Action Date:	Not reported
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:

Chemical:	VOCS
Quantity:	Not reported
Location Type:	JUNKYARD
Source:	UNKNOWN

43
WSW
1/2-1
0.557 mi.
2941 ft.

CHRISTMAS TREE SHOP/TRADER JOES **MA SHWS S120630376**
655 IYANOUGH ROAD (RT.132) **MA RELEASE N/A**
HYANNIS, MA 02601

Relative:
Higher

Actual:
49 ft.

SHWS:

Name:	CHRISTMAS TREE SHOP/TRADER JOES
Address:	655 IYANOUGH ROAD (RT.132)
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0026340
Source Type:	UNKNOWN
Release Town:	BARNSTABLE
Notification Date:	10/29/2016
Category:	TWO HR
Associated ID:	Not reported
Current Status:	PSNC
Status Date:	12/28/2016
Phase:	Not reported
Response Action Outcome:	PN
Oil Or Haz Material:	Not reported

Release:

Name:	CHRISTMAS TREE SHOP/TRADER JOES
Address:	655 IYANOUGH ROAD (RT.132)
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0026340 / PSNC
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	10/29/2016
Category:	TWO HR
Status Date:	12/28/2016
Phase:	Not reported
Response Action Outcome:	PN - PN
Oil / Haz Material Type:	Not reported

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	10/29/2016
Response Action Outcome:	PN

Action Type:	A Notice sent to a Potentially Responsible Party (PRP)

CHRISTMAS TREE SHOP/TRADER JOES (Continued) **S120630376**

Action Status:	FLDISS
Action Date:	10/29/2016
Response Action Outcome:	PN
Action Type:	RLFA
Action Status:	PRPMTG
Action Date:	10/29/2016
Response Action Outcome:	PN
Action Type:	Immediate Response Action
Action Status:	Oral Approval of Plan or Action
Action Date:	10/29/2016
Response Action Outcome:	PN
Action Type:	Immediate Response Action
Action Status:	NOAPP
Action Date:	10/29/2016
Response Action Outcome:	PN
Action Type:	RLFA
Action Status:	FLDD1A
Action Date:	10/29/2016
Response Action Outcome:	PN
Action Type:	BOL
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	11/28/2016
Response Action Outcome:	PN
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	11/7/2016
Response Action Outcome:	PN
Action Type:	BOL
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	12/2/2016
Response Action Outcome:	PN
Action Type:	BOL
Action Status:	SHPFAC
Action Date:	12/27/2016
Response Action Outcome:	PN
Action Type:	Response Action Outcome - RAO
Action Status:	PSNRCD
Action Date:	12/28/2016
Response Action Outcome:	PN
Action Type:	RNFE
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	12/28/2016
Response Action Outcome:	PN
Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	5/3/2017

CHRISTMAS TREE SHOP/TRADER JOES (Continued) **S120630376**

Response Action Outcome: PN

Chemicals:
Chemical: Not reported
Quantity: Not reported
Location Type: ROADWAY
Location Type: PRIVPROP
Location Type: COMMERCIAL
Source: UNKNOWN

---

44 NNW 1/2-1 0.573 mi. 3027 ft.

BARNSTABLE FIRE TRAINING ACADEMY
MARY DUNN RD
BARNSTABLE, MA

MA SHWS **S108858805**
MA RELEASE **N/A**

Relative: Higher

Actual: 42 ft.

SHWS:
Name: BARNSTABLE FIRE TRAINING ACADEMY
Address: MARY DUNN RD
City,State,Zip: BARNSTABLE, MA
Facility ID: 4-0020021
Source Type: Not reported
Release Town: BARNSTABLE
Notification Date: 08/25/2006
Category: 72 HR
Associated ID: Not reported
Current Status: RAONR
Status Date: 08/13/2007
Phase: Not reported
Response Action Outcome: Not reported
Oil Or Haz Material: Hazardous Material

Release:
Name: BARNSTABLE FIRE TRAINING ACADEMY
Address: MARY DUNN RD
City,State,Zip: BARNSTABLE, MA
Release Tracking Number/Current Status: 4-0020021 / RAONR
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 08/25/2006
Category: 72 HR
Status Date: 08/13/2007
Phase: Not reported
Response Action Outcome: -
Oil / Haz Material Type: Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:
Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 11/8/2006
Response Action Outcome: Not reported

Action Type: RLFA
Action Status: FLDRUN

BARNSTABLE FIRE TRAINING ACADEMY (Continued) **S108858805**

Action Date: 3/4/2015
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 5/23/1994
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via Minor Permit Modification
Action Date: 8/13/2007
Response Action Outcome: Not reported

Action Type: RAO Not Required
Action Status: Linked to a Tier Classified Site
Action Date: 8/13/2007
Response Action Outcome: Not reported

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 8/25/2006
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 9/23/1994
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 9/23/1994
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 9/23/1994
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Permit Extension Received
Action Date: 9/23/2000
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Permit Extension Received
Action Date: 9/7/2005
Response Action Outcome: Not reported

Chemicals:
Chemical: PERCHLORIC ACID
Quantity: 9.4 micrograms per liter
Location Type: MUNICIPAL
Location Type: OPENSPACE

45 SSW 1/2-1 0.579 mi. 3057 ft. — **REAR ALLEY, 360 BARNSTABLE ROAD, HYANNIS, MA** — **MA SHWS, MA RELEASE** — **S123541283, N/A**

Relative: Higher

Actual: 42 ft.

SHWS:

Name:	REAR ALLEY
Address:	360 BARNSTABLE ROAD
City,State,Zip:	HYANNIS, MA
Facility ID:	4-0027674
Source Type:	VEHICLE
Release Town:	BARNSTABLE
Notification Date:	02/20/2019
Category:	TWO HR
Associated ID:	Not reported
Current Status:	PSNC
Status Date:	03/21/2019
Phase:	Not reported
Response Action Outcome:	PN
Oil Or Haz Material:	Not reported

Release:

Name:	REAR ALLEY
Address:	360 BARNSTABLE ROAD
City,State,Zip:	HYANNIS, MA
Release Tracking Number/Current Status:	4-0027674 / PSNC
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	02/20/2019
Category:	TWO HR
Status Date:	03/21/2019
Phase:	Not reported
Response Action Outcome:	PN - PN
Oil / Haz Material Type:	Not reported

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	RLFA
Action Status:	FLDD1U
Action Date:	2/20/2019
Response Action Outcome:	PN
Action Type:	Immediate Response Action
Action Status:	Oral Approval of Plan or Action
Action Date:	2/20/2019
Response Action Outcome:	PN
Action Type:	RLFA
Action Status:	FOLOFF
Action Date:	2/20/2019
Response Action Outcome:	PN
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	2/20/2019
Response Action Outcome:	PN

REAR ALLEY (Continued) **S123541283**

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 2/20/2019
Response Action Outcome: PN

Action Type: RLFA
Action Status: FLDD1U
Action Date: 2/21/2019
Response Action Outcome: PN

Action Type: RNFE
Action Status: Transmittal, Notice, or Notification Received
Action Date: 3/21/2019
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: PSNRCD
Action Date: 3/21/2019
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 6/5/2019
Response Action Outcome: PN

Chemicals:
Chemical: Not reported
Quantity: Not reported
Location Type: COMMERCIAL
Source: VEHICLE

---

46 South 1/2-1 0.582 mi. 3075 ft.

ABCO RENTAL CENTER INC
181 SPRING ST
HYANNIS, MA 02601

MA SHWS **S106513270**
MA RELEASE **N/A**
MA HW GEN

Relative: Higher

Actual: 40 ft.

SHWS:
Name: OFF RTE 28
Address: 181 SPRING ST
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0014306
Source Type: Not reported
Release Town: BARNSTABLE
Notification Date: 11/02/1998
Category: 120 DY
Associated ID: Not reported
Current Status: RAO
Status Date: 04/08/1999
Phase: Not reported
Response Action Outcome: A2
Oil Or Haz Material: Oil

Release:
Name: OFF RTE 28
Address: 181 SPRING ST
City,State,Zip: HYANNIS, MA 026010000

ABCO RENTAL CENTER INC (Continued) **S106513270**

Release Tracking Number/Current Status: 4-0014306 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 11/02/1998
Category: 120 DY
Status Date: 04/08/1999
Phase: Not reported
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 11/19/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 11/2/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 11/2/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure
Action Status: Fee Received - FMCRA Use Only
Action Date: 12/22/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 3/24/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 3/8/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Fee Received - FMCRA Use Only
Action Date: 4/12/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure

ABCO RENTAL CENTER INC (Continued) **S106513270**

Action Status: Completion Statement Received
Action Date: 4/8/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 4/8/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: TPH
Quantity: 17000 parts per million

HW GEN:
Name: ABCO RENTAL CENTER INC
Address: 181 SPRING ST
City,State,Zip: HYANNIS, MA 02601
EPA Id: MAD981889017
RCRA Generator Status: VSQG
State Generator Status: Not reported

Name: ADAMS SMALL ENGINE SERVICE
Address: 181 SPRING ST
City,State,Zip: HYANNIS, MA 02601
EPA Id: MV5087750231
RCRA Generator Status: VSQG
State Generator Status: VQG-MA

---

47 NNW 1/2-1 0.590 mi. 3115 ft. **BARNSTABLE COUNTY FIRE TRAINING ACADEMY** **MA SHWS S106513030**
MARY DUNN RD **MA RELEASE N/A**
HYANNIS, MA 02601 **MA UIC**

Relative: Lower
Actual: 36 ft.

SHWS:
Name: BARNSTABLE COUNTY FIRE TRAINING ACADEMY
Address: MARY DUNN RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0000190
Source Type: UNKNOWN
Release Town: BARNSTABLE
Notification Date: 08/25/1986
Category: 72 HR
Associated ID: 4-0000190
Current Status: RAO
Status Date: 06/01/2001
Phase: PHASE V
Response Action Outcome: C1
Oil Or Haz Material: Oil and Hazardous Material

Name: BARNSTABLE COUNTY FIRE TRAINING ACADEMY
Address: MARY DUNN RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0000190
Source Type: UNCONTAIN

BARNSTABLE COUNTY FIRE TRAINING ACADEMY (Continued) **S106513030**

Release Town:	BARNSTABLE
Notification Date:	08/25/1986
Category:	72 HR
Associated ID:	4-0000190
Current Status:	RAO
Status Date:	06/01/2001
Phase:	PHASE V
Response Action Outcome:	C1
Oil Or Haz Material:	Oil and Hazardous Material

Release:

Name:	BARNSTABLE COUNTY FIRE TRAINING ACADEMY
Address:	MARY DUNN RD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0000190 / RAO
Primary ID:	4-0000190
Official City:	BARNSTABLE
Notification:	08/25/1986
Category:	72 HR
Status Date:	06/01/2001
Phase:	PHASE V
Response Action Outcome:	C1 - C1
Oil / Haz Material Type:	Oil and Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Phase 4
Action Status:	As-Built Construction Report Received
Action Date:	1/17/2007
Response Action Outcome:	C1

Action Type:	Phase 4
Action Status:	Completion Statement Received
Action Date:	1/17/2007
Response Action Outcome:	C1

Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	1/17/2007
Response Action Outcome:	C1

Action Type:	Phase 5
Action Status:	Remedy Operation Status Submittal Received
Action Date:	1/17/2007
Response Action Outcome:	C1

Action Type:	Phase 4
Action Status:	Status or Interim Report Received
Action Date:	1/17/2007
Response Action Outcome:	C1

Action Type:	Response Action Outcome - RAO
Action Status:	Inspection and Monitoring Report Received
Action Date:	1/31/2018
Response Action Outcome:	C1

BARNSTABLE COUNTY FIRE TRAINING ACADEMY (Continued) **S106513030**

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 1/31/2018
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRINT
Action Date: 10/11/2017
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 10/11/2017
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRINT
Action Date: 10/30/2007
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: Written Plan Received
Action Date: 11/10/2006
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: Request to Terminate an Imminent Hazard Received
Action Date: 11/10/2008
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRFIN
Action Date: 11/10/2008
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 11/10/2008
Response Action Outcome: C1

Action Type: Release Abatement Measure
Action Status: Completion Statement Received
Action Date: 11/17/1998
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 11/29/2010
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: Request to Terminate an Imminent Hazard Received
Action Date: 11/29/2010
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRFIN

BARNSTABLE COUNTY FIRE TRAINING ACADEMY (Continued) **S106513030**

Action Date: 11/29/2010
Response Action Outcome: C1

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 11/29/2010
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 11/29/2010
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRINT
Action Date: 11/6/2007
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 12/1/2011
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 12/21/2007
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRINT
Action Date: 12/21/2007
Response Action Outcome: C1

Action Type: BOL
Action Status: Transmittal, Notice, or Notification Received
Action Date: 12/29/2011
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRINT
Action Date: 12/3/2007
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 2/1/2013
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 2/1/2013
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 2/12/2016
Response Action Outcome: C1

BARNSTABLE COUNTY FIRE TRAINING ACADEMY (Continued) **S106513030**

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 2/12/2016
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 2/17/2011
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 2/17/2011
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: Modified Revised or Updated Plan Received
Action Date: 2/2/2007
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: Request to Terminate an Imminent Hazard Received
Action Date: 2/23/2010
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 2/23/2010
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRINT
Action Date: 2/23/2010
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: RMRFIN
Action Date: 2/23/2015
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 2/23/2015
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 2/28/2014
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 2/28/2014
Response Action Outcome: C1

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received

BARNSTABLE COUNTY FIRE TRAINING ACADEMY (Continued) **S106513030**

Action Date: 2/3/2012
Response Action Outcome: C1

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 2/3/2012
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 2/5/2010
Response Action Outcome: C1

Action Type: Phase 5
Action Status: Action Status or AUL Terminated
Action Date: 2/5/2010
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 2/5/2010
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRINT
Action Date: 2/7/2008
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 3/13/2017
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 3/13/2017
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: Imminent Hazard Evaluation Received
Action Date: 3/25/1999
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRINT
Action Date: 3/5/2008
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRINT
Action Date: 4/3/2008
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 4/8/2009
Response Action Outcome: C1

BARNSTABLE COUNTY FIRE TRAINING ACADEMY (Continued) **S106513030**

Action Type:	Phase 2
Action Status:	Tier 1A or Priority Submittal Approved
Action Date:	5/19/1989
Response Action Outcome:	C1
Action Type:	Phase 3
Action Status:	Completion Statement Received
Action Date:	5/22/2001
Response Action Outcome:	C1
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	5/22/2001
Response Action Outcome:	C1
Action Type:	Phase 5
Action Status:	Remedy Operation Status Submittal Received
Action Date:	5/22/2001
Response Action Outcome:	C1
Action Type:	Tier Classification
Action Status:	Tier 1A Classification
Action Date:	5/23/1994
Response Action Outcome:	C1
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	6/1/2001
Response Action Outcome:	C1
Action Type:	Release Abatement Measure
Action Status:	Status or Interim Report Received
Action Date:	6/14/2011
Response Action Outcome:	C1
Action Type:	Immediate Response Action
Action Status:	RMRINT
Action Date:	6/20/2008
Response Action Outcome:	C1
Action Type:	Immediate Response Action
Action Status:	RMRINT
Action Date:	6/4/2008
Response Action Outcome:	C1
Action Type:	Compliance and Enforcement Action
Action Status:	RFI
Action Date:	7/20/1988
Response Action Outcome:	C1
Action Type:	Immediate Response Action
Action Status:	Status or Interim Report Received
Action Date:	7/27/2009
Response Action Outcome:	C1
Action Type:	Immediate Response Action
Action Status:	RMRINT

BARNSTABLE COUNTY FIRE TRAINING ACADEMY (Continued) **S106513030**

Action Date: 7/27/2009
Response Action Outcome: C1

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 7/31/2008
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 7/31/2008
Response Action Outcome: C1

Action Type: Phase 5
Action Status: RMRINT
Action Date: 7/31/2008
Response Action Outcome: C1

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via Minor Permit Modification
Action Date: 8/13/2007
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRINT
Action Date: 8/13/2008
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRINT
Action Date: 8/20/2008
Response Action Outcome: C1

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 8/25/1986
Response Action Outcome: C1

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 8/25/1986
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 8/4/2008
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 8/4/2008
Response Action Outcome: C1

Action Type: Phase 5
Action Status: Completion Statement Received
Action Date: 8/8/2012
Response Action Outcome: C1

BARNSTABLE COUNTY FIRE TRAINING ACADEMY (Continued) **S106513030**

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 8/8/2012
Response Action Outcome: C1

Action Type: RLFA
Action Status: FLDD1U
Action Date: 9/12/2006
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 9/17/2007
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRINT
Action Date: 9/17/2007
Response Action Outcome: C1

Action Type: TREGS
Action Status: BWSC04
Action Date: 9/23/1994
Response Action Outcome: C1

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 9/23/1994
Response Action Outcome: C1

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 9/23/1994
Response Action Outcome: C1

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 9/23/1994
Response Action Outcome: C1

Action Type: Tier Classification
Action Status: Permit Extension Received
Action Date: 9/23/2000
Response Action Outcome: C1

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 9/25/2006
Response Action Outcome: C1

Action Type: Immediate Response Action
Action Status: RMRINT
Action Date: 9/26/2008
Response Action Outcome: C1

Action Type: Release Abatement Measure
Action Status: Action Status or AUL Terminated

BARNSTABLE COUNTY FIRE TRAINING ACADEMY (Continued) **S106513030**

Action Date: 9/30/2011
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 9/4/2009
Response Action Outcome: C1

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 9/4/2009
Response Action Outcome: C1

Action Type: Tier Classification
Action Status: Permit Extension Received
Action Date: 9/7/2005
Response Action Outcome: C1

Action Type: Phase 4
Action Status: Written Plan Received
Action Date: 9/7/2005
Response Action Outcome: C1

Action Type: BWS20
Action Status: APPROV
Action Date: Not reported
Response Action Outcome: C1

Chemicals:
Chemical: UNKNOWN CHEMICAL OF TYPE - HAZARDOUS MATERIAL
Quantity: Not reported
Chemical: PETROLEUM
Quantity: Not reported
Location Type: FIRE TRAIN
Location Type: MUNICIPAL
Source: UNKNOWN
Source: UNCONTAIN

UIC:
RTN Number: 4-0000190
Name: BARNSTABLE COUNTY COMMISSIONERS
Address: MARY DUNN RD
City,State,Zip: HYANNIS, MA 026010000
Permit Date: 01/31/2018
Actor Name: Not reported
Air Sparging: Yes/Inactive
Injection Well: Yes/Inactive
ReInjection Well: Yes/Inactive
UIC APL Type: Not reported
Latitude: 41.67815238
Well Status: Not reported
Longitude: -70.28513596
UIC ID: Not reported
EPA Code: Not reported
Indicates Area: Not reported
Number of Wells: Not reported

BARNSTABLE COUNTY FIRE TRAINING ACADEMY (Continued) **S106513030**

Owner:	Not reported
Receive Date:	Not reported
Authorization to Install/Close Date:	Not reported
Confirmation of Install Receive:	Not reported
Post-Closure Receive:	Not reported
Final Approval Date:	Not reported
Permit Number:	Not reported
Permit Type:	Not reported
Permit Type Description:	Not reported
Program:	Not reported
Applicant Name:	Not reported
Decision Date:	Not reported
Operator Name:	JACK YUNITS
Well ID:	Not reported
Well Type Name:	Not reported
Max Well Depth:	Not reported
Date Complete:	Not reported
Work Performed:	Not reported
Depth to Bedrock:	Not reported
Water Level:	Not reported

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48 **NAV AUX AIR FACILITY** **FUDS** **1024899927**
ENE **N/A**
1/2-1 **HYANNIS, MA**
0.600 mi.
3169 ft.

Relative: **Lower**

Actual: **39 ft.**

FUDS:

EPA Region:	01
Installation ID:	MA19799F870900
Congressional District Number:	9
Name:	NAV AUX AIR FACILITY
FUDS Number:	D01MA0539
City:	HYANNIS
State:	MA
County:	BARNSTABLE
Object ID:	9855
USACE Division:	NAD
USACE District:	New England District (NAE)
Status:	Properties without projects
Current Owner:	LOCAL: COUNTY Phillip J. Reilly, Asst Airport Mgr 508-775-2020 and Thomas Hadley, Operational & Environmental Superv.
EMS Map Link:	https://fudsportal.usace.army.mil/ems/inventory/map?id=55372
Eligibility:	Eligible
Has Projects:	No
NPL Status:	Not reported
Project Required:	No
Feature Description:	The site was known as the Naval Auxiliary Air Facility, Barnstable, Massachusetts. The site was used by the Navy as an auxiliary air facility during World War II.
Latitude:	41.67194444
Longitude:	-70.27055556

49
ESE
1/2-1
0.603 mi.
3185 ft.

PURITAN PONTIAC BDP
460 YARMOUTH RD
HYANNIS, MA 02110

MA SHWS **U002007972**
MA RELEASE **N/A**
MA HW GEN

Relative:
Lower

Actual:
36 ft.

SHWS:

Name:	PURITAN PONTIAC BDP
Address:	460 YARMOUTH RD
City,State,Zip:	HYANNIS, MA 02110
Facility ID:	4-0000251
Source Type:	DRUMS
Release Town:	BARNSTABLE
Notification Date:	01/15/1987
Category:	NONE
Associated ID:	Not reported
Current Status:	DEPNFA
Status Date:	07/23/1993
Phase:	Not reported
Response Action Outcome:	Not reported
Oil Or Haz Material:	Oil

Name:	PURITAN PONTIAC BDP
Address:	460 YARMOUTH RD
City,State,Zip:	HYANNIS, MA 02110
Facility ID:	4-0000251
Source Type:	SEWER TRAP
Release Town:	BARNSTABLE
Notification Date:	01/15/1987
Category:	NONE
Associated ID:	Not reported
Current Status:	DEPNFA
Status Date:	07/23/1993
Phase:	Not reported
Response Action Outcome:	Not reported
Oil Or Haz Material:	Oil

Release:

Name:	PURITAN PONTIAC BDP
Address:	460 YARMOUTH RD
City,State,Zip:	HYANNIS, MA 02110
Release Tracking Number/Current Status:	4-0000251 / DEPNFA
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	01/15/1987
Category:	NONE
Status Date:	07/23/1993
Phase:	Not reported
Response Action Outcome:	-
Oil / Haz Material Type:	Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	1/13/1987
Response Action Outcome:	Not reported

PURITAN PONTIAC BDP (Continued) **U002007972**

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 1/15/1987
Response Action Outcome: Not reported

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 11/13/1987
Response Action Outcome: Not reported

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 11/26/1986
Response Action Outcome: Not reported

Action Type: TREGS
Action Status: DEPNFA
Action Date: 7/23/1993
Response Action Outcome: Not reported

Action Type: TREGS
Action Status: REMSIT
Action Date: 7/23/1993
Response Action Outcome: Not reported

Chemicals:
Chemical: WASTE OIL
Quantity: Not reported
Source: DRUMS
Source: SEWER TRAP

HW GEN:
Name: PREMIER CAPE COD
Address: 460 YARMOUTH RD
City,State,Zip: HYANNIS, MA 02601
EPA Id: MAD019412386
RCRA Generator Status: SQG
State Generator Status: LQG-MA

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50 SSW 1/2-1 0.605 mi. 3196 ft. **BARNSTABLE GETTY STATION** **MA SHWS S100828136**
BARNSTABLE RD **MA RELEASE N/A**
BARNSTABLE, MA 02630

Relative: Higher
Actual: 42 ft.

SHWS:
Name: BARNSTABLE GETTY STATION
Address: BARNSTABLE RD
City,State,Zip: BARNSTABLE, MA 02630
Facility ID: 4-0000706
Source Type: Not reported
Release Town: BARNSTABLE
Notification Date: 04/15/1989
Category: NONE
Associated ID: Not reported
Current Status: LSPNFA
Status Date: 07/18/1996

BARNSTABLE GETTY STATION (Continued) **S100828136**

Phase: Not reported
Response Action Outcome: Not reported
Oil Or Haz Material: Not reported

Release:
Name: BARNSTABLE GETTY STATION
Address: BARNSTABLE RD
City,State,Zip: BARNSTABLE, MA 02630
Release Tracking Number/Current Status: 4-0000706 / LSPNFA
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 04/15/1989
Category: NONE
Status Date: 07/18/1996
Phase: Not reported
Response Action Outcome: -
Oil / Haz Material Type: Not reported

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 4/15/1989
Response Action Outcome: Not reported

Action Type: TREGS
Action Status: LSPNFA
Action Date: 7/18/1996
Response Action Outcome: Not reported

Chemicals:
Chemical: UNKNOWN
Quantity: Not reported

51
SSW
1/2-1
0.611 mi.
3227 ft.

CAPE COD COMMERCIAL LINEN SERVICE **MA SHWS** **S109146363**
LEWIS ROAD AT BAXTER AVE **MA RELEASE** **N/A**
HYANNIS, MA

Relative:
Higher

Actual:
42 ft.

SHWS:
Name: CAPE COD COMMERCIAL LINEN SERVICE
Address: LEWIS ROAD AT BAXTER AVE
City,State,Zip: HYANNIS, MA
Facility ID: 4-0021245
Source Type: Not reported
Release Town: BARNSTABLE
Notification Date: 05/12/2008
Category: TWO HR
Associated ID: Not reported
Current Status: RAO
Status Date: 07/11/2008
Phase: Not reported
Response Action Outcome: A1
Oil Or Haz Material: Hazardous Material

CAPE COD COMMERCIAL LINEN SERVICE (Continued) **S109146363**

Release:

Name:	CAPE COD COMMERCIAL LINEN SERVICE
Address:	LEWIS ROAD AT BAXTER AVE
City,State,Zip:	HYANNIS, MA
Release Tracking Number/Current Status:	4-0021245 / RAO
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	05/12/2008
Category:	TWO HR
Status Date:	07/11/2008
Phase:	Not reported
Response Action Outcome:	A1 - A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Oil / Haz Material Type:	Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	12/18/2008
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	Compliance and Enforcement Action
Action Status:	ACOP
Action Date:	2/24/2009
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	5/12/2008
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	RLFA
Action Status:	FOLOFF
Action Date:	5/12/2008
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	5/30/2008
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	Compliance and Enforcement Action
Action Status:	Interim Deadline Letter Issued
Action Date:	5/30/2008
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	RNFE
Action Status:	Transmittal, Notice, or Notification Received

CAPE COD COMMERCIAL LINEN SERVICE (Continued) **S109146363**

Action Date: 7/10/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 7/11/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 7/31/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Chemicals:
Chemical: SODIUM HYPOCHLORITE
Quantity: 2 gallons
Location Type: ROADWAY

52
ESE
1/2-1
0.612 mi.
3232 ft.

IN FRONT OF BALISE HYUNDAI **MA SHWS** **S118643450**
519 YARMOUTH ROAD **MA RELEASE** **N/A**
HYANNIS, MA

Relative:
Lower

Actual:
37 ft.

SHWS:
Name: IN FRONT OF BALISE HYUNDAI
Address: 519 YARMOUTH ROAD
City,State,Zip: HYANNIS, MA
Facility ID: 4-0026164
Source Type: FUELTANK
Release Town: BARNSTABLE
Notification Date: 06/21/2016
Category: TWO HR
Associated ID: Not reported
Current Status: PSNC
Status Date: 08/19/2016
Phase: Not reported
Response Action Outcome: PN
Oil Or Haz Material: Not reported

Name: IN FRONT OF BALISE HYUNDAI
Address: 519 YARMOUTH ROAD
City,State,Zip: HYANNIS, MA
Facility ID: 4-0026164
Source Type: VEHICLE
Release Town: BARNSTABLE
Notification Date: 06/21/2016
Category: TWO HR
Associated ID: Not reported
Current Status: PSNC
Status Date: 08/19/2016
Phase: Not reported
Response Action Outcome: PN
Oil Or Haz Material: Not reported

IN FRONT OF BALISE HYUNDAI (Continued) **S118643450**

Release:

Name:	IN FRONT OF BALISE HYUNDAI
Address:	519 YARMOUTH ROAD
City,State,Zip:	HYANNIS, MA
Release Tracking Number/Current Status:	4-0026164 / PSNC
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	06/21/2016
Category:	TWO HR
Status Date:	08/19/2016
Phase:	Not reported
Response Action Outcome:	PN - PN
Oil / Haz Material Type:	Not reported

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	6/21/2016
Response Action Outcome:	PN
Action Type:	Immediate Response Action
Action Status:	Oral Approval of Plan or Action
Action Date:	6/21/2016
Response Action Outcome:	PN
Action Type:	BOL
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	7/28/2016
Response Action Outcome:	PN
Action Type:	BOL
Action Status:	SHPFAC
Action Date:	8/10/2016
Response Action Outcome:	PN
Action Type:	Response Action Outcome - RAO
Action Status:	PSNRCD
Action Date:	8/19/2016
Response Action Outcome:	PN
Action Type:	RNFE
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	8/19/2016
Response Action Outcome:	PN
Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	9/13/2016
Response Action Outcome:	PN

Chemicals:

Chemical:	Not reported
Quantity:	Not reported
Location Type:	ROADWAY

IN FRONT OF BALISE HYUNDAI (Continued) **S118643450**

Source: VEHICLE
Source: FUELTANK

53
SSE
1/2-1
0.613 mi.
3234 ft.

ATWOOD OIL (HUBBARD OIL CO INC)
33 BROOKS RD
HYANNIS, MA 02601

MA SHWS **S106513324**
MA LAST **N/A**
MA RELEASE
MA UIC

Relative:
Lower

Actual:
39 ft.

SHWS:
Name: PARCEL 125
Address: 33 BROOKS RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0015370
Source Type: DRUMS
Release Town: BARNSTABLE
Notification Date: 03/20/2000
Category: TWO HR
Associated ID: Not reported
Current Status: RAONR
Status Date: 03/20/2000
Phase: Not reported
Response Action Outcome: Not reported
Oil Or Haz Material: Not reported

LAST:
Name: ATWOOD OIL (HUBBARD OIL CO INC)
Address: 33 BROOKS RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0000824 / RAO
Source Type: AST
Release Town: BARNSTABLE
Notification Date: 11/01/1989
Category: NONE
Associated ID: 4-0000824
Status Date: 08/31/2012
Phase: PHASE V
Response Action Outcome: TF - TF
Oil Or Haz Material: Oil

Chemicals:
Chemical: PETROLEUM
Quantity: Not reported
Location Type: COMMERCIAL
Source: AST

Actions:
Action Type: Phase 3
Action Status: Notice of Delay in Meeting RA Deadline Received
Action Date: 1/13/2003
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 1/7/2004
Response Action Outcome: TF

Action Type: Phase 5

ATWOOD OIL (HUBBARD OIL CO INC) (Continued) **S106513324**

Action Status: RMRFIN
Action Date: 10/15/2009
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 10/15/2009
Response Action Outcome: TF

Action Type: Compliance and Enforcement Action
Action Status: ACO
Action Date: 10/21/2002
Response Action Outcome: TF

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 11/1/1989
Response Action Outcome: TF

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 11/1/1989
Response Action Outcome: TF

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 11/21/2002
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 2/2/2005
Response Action Outcome: TF

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 2/20/2003
Response Action Outcome: TF

Action Type: Phase 4
Action Status: Notice of Delay in Meeting RA Deadline Received
Action Date: 3/17/2003
Response Action Outcome: TF

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 3/18/2005
Response Action Outcome: TF

Action Type: RLFA
Action Status: FLDRUN
Action Date: 3/20/2000
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via Tier Classification Submittal
Action Date: 3/20/2000

ATWOOD OIL (HUBBARD OIL CO INC) (Continued) **S106513324**

Response Action Outcome: TF

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/21/2008
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 3/21/2008
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 3/22/2006
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 3/22/2007
Response Action Outcome: TF

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/22/2007
Response Action Outcome: TF

Action Type: Phase 4
Action Status: Modified Revised or Updated Plan Received
Action Date: 3/24/2005
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 3/24/2005
Response Action Outcome: TF

Action Type: RLFA
Action Status: FLDRAN
Action Date: 3/29/2007
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/30/2009
Response Action Outcome: TF

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/30/2009
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 4/3/2000
Response Action Outcome: TF

ATWOOD OIL (HUBBARD OIL CO INC) (Continued) **S106513324**

Action Type:	Compliance and Enforcement Action
Action Status:	Notice of Non-Compliance Issued
Action Date:	5/31/2012
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Periodic Review Opinion Evaluating Temp Solution
Action Date:	5/4/2018
Response Action Outcome:	TF
Action Type:	RLFA
Action Status:	FLDRUN
Action Date:	6/26/2012
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Inspection and Monitoring Report Received
Action Date:	6/26/2019
Response Action Outcome:	TF
Action Type:	Phase 4
Action Status:	Written Plan Received
Action Date:	6/30/2003
Response Action Outcome:	TF
Action Type:	Compliance and Enforcement Action
Action Status:	Notice of Non-Compliance Issued
Action Date:	6/5/2002
Response Action Outcome:	TF
Action Type:	RLFA
Action Status:	FOLOFF
Action Date:	6/7/2012
Response Action Outcome:	TF
Action Type:	Phase 5
Action Status:	Remedy Operation Status Submittal Received
Action Date:	7/15/2004
Response Action Outcome:	TF
Action Type:	Immediate Response Action
Action Status:	Imminent Hazard Evaluation Received
Action Date:	8/11/2000
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	8/31/2012
Response Action Outcome:	TF
Action Type:	Tier Classification
Action Status:	Tier 1C Classification
Action Date:	8/9/1996
Response Action Outcome:	TF
Action Type:	Phase 1
Action Status:	Completion Statement Received

ATWOOD OIL (HUBBARD OIL CO INC) (Continued) **S106513324**

Action Date: 8/9/1996
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 8/9/1996
Response Action Outcome: TF

Action Type: TREGS
Action Status: LSPFA
Action Date: 8/9/1996
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 9/22/2006
Response Action Outcome: TF

Action Type: Phase 2
Action Status: Scope of Work Received
Action Date: 9/23/2002
Response Action Outcome: TF

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/26/2008
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/26/2008
Response Action Outcome: TF

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/28/2007
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 9/28/2007
Response Action Outcome: TF

Action Type: Compliance and Enforcement Action
Action Status: Notice of Delay in Meeting RA Deadline Received
Action Date: 9/29/2003
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 9/30/2005
Response Action Outcome: TF

Action Type: Phase 4
Action Status: Completion Statement Received
Action Date: 9/30/2005
Response Action Outcome: TF

ATWOOD OIL (HUBBARD OIL CO INC) (Continued) **S106513324**

Action Type:	Phase 4
Action Status:	As-Built Construction Report Received
Action Date:	9/30/2005
Response Action Outcome:	TF

Action Type:	RLFA
Action Status:	FLDRAN
Action Date:	9/6/2007
Response Action Outcome:	TF

Action Type:	BWS03
Action Status:	APPROV
Action Date:	Not reported
Response Action Outcome:	TF

Release:

Name:	ATWOOD OIL (HUBBARD OIL CO INC)
Address:	33 BROOKS RD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0000824 / RAO
Primary ID:	4-0000824
Official City:	BARNSTABLE
Notification:	11/01/1989
Category:	NONE
Status Date:	08/31/2012
Phase:	PHASE V
Response Action Outcome:	TF - TF
Oil / Haz Material Type:	Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Phase 3
Action Status:	Notice of Delay in Meeting RA Deadline Received
Action Date:	1/13/2003
Response Action Outcome:	TF

Action Type:	Phase 5
Action Status:	Remedy Operation Status Submittal Received
Action Date:	1/7/2004
Response Action Outcome:	TF

Action Type:	Phase 5
Action Status:	RMRFIN
Action Date:	10/15/2009
Response Action Outcome:	TF

Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	10/15/2009
Response Action Outcome:	TF

Action Type:	Compliance and Enforcement Action
Action Status:	ACO
Action Date:	10/21/2002

ATWOOD OIL (HUBBARD OIL CO INC) (Continued) **S106513324**

Response Action Outcome: TF

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 11/1/1989
Response Action Outcome: TF

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 11/1/1989
Response Action Outcome: TF

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 11/21/2002
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 2/2/2005
Response Action Outcome: TF

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 2/20/2003
Response Action Outcome: TF

Action Type: Phase 4
Action Status: Notice of Delay in Meeting RA Deadline Received
Action Date: 3/17/2003
Response Action Outcome: TF

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 3/18/2005
Response Action Outcome: TF

Action Type: RLFA
Action Status: FLDRUN
Action Date: 3/20/2000
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via Tier Classification Submittal
Action Date: 3/20/2000
Response Action Outcome: TF

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/21/2008
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 3/21/2008
Response Action Outcome: TF

ATWOOD OIL (HUBBARD OIL CO INC) (Continued) **S106513324**

Action Type:	Phase 5
Action Status:	Remedy Operation Status Submittal Received
Action Date:	3/22/2006
Response Action Outcome:	TF
Action Type:	Phase 5
Action Status:	Remedy Operation Status Submittal Received
Action Date:	3/22/2007
Response Action Outcome:	TF
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	3/22/2007
Response Action Outcome:	TF
Action Type:	Phase 4
Action Status:	Modified Revised or Updated Plan Received
Action Date:	3/24/2005
Response Action Outcome:	TF
Action Type:	Phase 5
Action Status:	Remedy Operation Status Submittal Received
Action Date:	3/24/2005
Response Action Outcome:	TF
Action Type:	RLFA
Action Status:	FLDRAN
Action Date:	3/29/2007
Response Action Outcome:	TF
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	3/30/2009
Response Action Outcome:	TF
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	3/30/2009
Response Action Outcome:	TF
Action Type:	Tier Classification
Action Status:	Permit Effective Date
Action Date:	4/3/2000
Response Action Outcome:	TF
Action Type:	Compliance and Enforcement Action
Action Status:	Notice of Non-Compliance Issued
Action Date:	5/31/2012
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Periodic Review Opinion Evaluating Temp Solution
Action Date:	5/4/2018
Response Action Outcome:	TF
Action Type:	RLFA
Action Status:	FLDRUN

ATWOOD OIL (HUBBARD OIL CO INC) (Continued) **S106513324**

Action Date: 6/26/2012
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/26/2019
Response Action Outcome: TF

Action Type: Phase 4
Action Status: Written Plan Received
Action Date: 6/30/2003
Response Action Outcome: TF

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 6/5/2002
Response Action Outcome: TF

Action Type: RLFA
Action Status: FOLOFF
Action Date: 6/7/2012
Response Action Outcome: TF

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 7/15/2004
Response Action Outcome: TF

Action Type: Immediate Response Action
Action Status: Imminent Hazard Evaluation Received
Action Date: 8/11/2000
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 8/31/2012
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Tier 1C Classification
Action Date: 8/9/1996
Response Action Outcome: TF

Action Type: Phase 1
Action Status: Completion Statement Received
Action Date: 8/9/1996
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 8/9/1996
Response Action Outcome: TF

Action Type: TREGS
Action Status: LSPFA
Action Date: 8/9/1996
Response Action Outcome: TF

ATWOOD OIL (HUBBARD OIL CO INC) (Continued) **S106513324**

Action Type:	Phase 5
Action Status:	Remedy Operation Status Submittal Received
Action Date:	9/22/2006
Response Action Outcome:	TF
Action Type:	Phase 2
Action Status:	Scope of Work Received
Action Date:	9/23/2002
Response Action Outcome:	TF
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	9/26/2008
Response Action Outcome:	TF
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	9/26/2008
Response Action Outcome:	TF
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	9/28/2007
Response Action Outcome:	TF
Action Type:	Phase 5
Action Status:	Remedy Operation Status Submittal Received
Action Date:	9/28/2007
Response Action Outcome:	TF
Action Type:	Compliance and Enforcement Action
Action Status:	Notice of Delay in Meeting RA Deadline Received
Action Date:	9/29/2003
Response Action Outcome:	TF
Action Type:	Phase 5
Action Status:	Remedy Operation Status Submittal Received
Action Date:	9/30/2005
Response Action Outcome:	TF
Action Type:	Phase 4
Action Status:	Completion Statement Received
Action Date:	9/30/2005
Response Action Outcome:	TF
Action Type:	Phase 4
Action Status:	As-Built Construction Report Received
Action Date:	9/30/2005
Response Action Outcome:	TF
Action Type:	RLFA
Action Status:	FLDRAN
Action Date:	9/6/2007
Response Action Outcome:	TF
Action Type:	BWS03
Action Status:	APPROV

ATWOOD OIL (HUBBARD OIL CO INC) (Continued) **S106513324**

Action Date: Not reported
Response Action Outcome: TF

Chemicals:
Chemical: PETROLEUM
Quantity: Not reported
Location Type: COMMERCIAL
Source: AST

Name: PARCEL 125
Address: 33 BROOKS RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0015370 / RAONR
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 03/20/2000
Category: TWO HR
Status Date: 03/20/2000
Phase: Not reported
Response Action Outcome: -
Oil / Haz Material Type: Not reported

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via Tier Classification Submittal
Action Date: 3/20/2000
Response Action Outcome: Not reported

Action Type: RAO Not Required
Action Status: Linked to a Tier Classified Site
Action Date: 3/20/2000
Response Action Outcome: Not reported

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 3/20/2000
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Written Plan Received
Action Date: 4/13/2000
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Written Approval of Plan
Action Date: 4/20/2000
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 4/3/2000
Response Action Outcome: Not reported

Action Type: Immediate Response Action

ATWOOD OIL (HUBBARD OIL CO INC) (Continued) **S106513324**

Action Status:	Imminent Hazard Evaluation Received
Action Date:	8/11/2000
Response Action Outcome:	Not reported
Action Type:	Immediate Response Action
Action Status:	Completion Statement Received
Action Date:	8/11/2000
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Tier 1C Classification
Action Date:	8/9/1996
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	8/9/1996
Response Action Outcome:	Not reported

Chemicals:

Chemical:	UNKNOWN CHEMICAL OF UNKNOWN TYPE
Quantity:	385 gallons
Location Type:	COMMERCIAL
Source:	DRUMS

UIC:

RTN Number:	4-0000824
Name:	HOP LLC
Address:	33 BROOKS RD
City,State,Zip:	HYANNIS, MA 026010000
Permit Date:	10/15/2009
Actor Name:	Not reported
Air Sparging:	Yes/Inactive
Injection Well:	No
ReInjection Well:	No
UIC APL Type:	Not reported
Latitude:	41.66227545
Well Status:	Not reported
Longitude:	-70.27549212
UIC ID:	Not reported
EPA Code:	Not reported
Indicates Area:	Not reported
Number of Wells:	Not reported
Owner:	Not reported
Receive Date:	Not reported
Authorization to Install/Close Date:	Not reported
Confirmation of Install Receive:	Not reported
Post-Closure Receive:	Not reported
Final Approval Date:	Not reported
Permit Number:	Not reported
Permit Type:	Not reported
Permit Type Description:	Not reported
Program:	Not reported
Applicant Name:	Not reported
Decision Date:	Not reported
Operator Name:	MURRAY SCUDDER JR

ATWOOD OIL (HUBBARD OIL CO INC) (Continued) **S106513324**

Well ID:	Not reported
Well Type Name:	Not reported
Max Well Depth:	Not reported
Date Complete:	Not reported
Work Performed:	Not reported
Depth to Bedrock:	Not reported
Water Level:	Not reported

G54 **URAM** **MA SHWS** **S128621468**
SSE **258 IYANNOUGH ROAD** **MA LUST** **N/A**
1/2-1 **HYANNIS, MA** **MA RELEASE**
0.616 mi.
3254 ft. **Site 1 of 2 in cluster G**

Relative:
Lower

Actual:
35 ft.

SHWS:

Name:	URAM
Address:	258 IYANNOUGH ROAD
City,State,Zip:	HYANNIS, MA
Facility ID:	4-0029244
Source Type:	URAM
Release Town:	BARNSTABLE
Notification Date:	03/03/2022
Category:	120 DY
Associated ID:	Not reported
Current Status:	URAM
Status Date:	03/09/2022
Phase:	Not reported
Response Action Outcome:	Not reported
Oil Or Haz Material:	Not reported

LUST:

Facility:

Name:	URAM
Address:	258 IYANNOUGH ROAD
City,State,Zip:	HYANNIS, MA
Current Status:	**Utility-Related Abatement Measure**
Release Tracking Number/Current Status:	4-0029244 / URAM
Status Date:	03/09/2022
Source Type:	UST
Release Town:	BARNSTABLE
Notification Date:	03/03/2022
Category:	120 DY
Associated ID:	Not reported
Phase:	Not reported
Response Action Outcome:	-
Oil Or Haz Material:	Not reported

Location Type:	RIGHTOFWAY
Location Type:	UTILEASE
Source:	UST
Source:	USTOTHER
Source:	URAM

Click here to access the MA DEP site for this facility:

URAM (Continued) **S128621468**

Chemicals:
Chemical: Not reported
Quantity: Not reported

Actions:
Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 3/3/2022
Response Action Outcome: Not reported

Action Type: Utility-related Abatement Measure
Action Status: Notice of Intent to Conduct a URAM
Action Date: 3/3/2022
Response Action Outcome: Not reported

Action Type: Utility-related Abatement Measure
Action Status: Notification of URAM Received
Action Date: 3/9/2022
Response Action Outcome: Not reported

Action Type: BOL
Action Status: Transmittal, Notice, or Notification Received
Action Date: 4/11/2022
Response Action Outcome: Not reported

Action Type: BOL
Action Status: SHPFAC
Action Date: 5/24/2022
Response Action Outcome: Not reported

Action Type: Utility-related Abatement Measure
Action Status: Completion Statement Received
Action Date: 6/17/2022
Response Action Outcome: Not reported

Facility:
Name: URAM
Address: 258 IYANNOUGH ROAD
City,State,Zip: HYANNIS, MA
Current Status: **Utility-Related Abatement Measure**
Release Tracking Number/Current Status: 4-0029244 / URAM
Status Date: 03/09/2022
Source Type: USTOTHER
Release Town: BARNSTABLE
Notification Date: 03/03/2022
Category: 120 DY
Associated ID: Not reported
Phase: Not reported
Response Action Outcome: -
Oil Or Haz Material: Not reported

Location Type: RIGHTOFWAY
Location Type: UTILEASE
Source: UST
Source: USTOTHER
Source: URAM

URAM (Continued) **S128621468**

Click here to access the MA DEP site for this facility:

Chemicals:
Chemical: Not reported
Quantity: Not reported

Actions:
Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 3/3/2022
Response Action Outcome: Not reported

Action Type: Utility-related Abatement Measure
Action Status: Notice of Intent to Conduct a URAM
Action Date: 3/3/2022
Response Action Outcome: Not reported

Action Type: Utility-related Abatement Measure
Action Status: Notification of URAM Received
Action Date: 3/9/2022
Response Action Outcome: Not reported

Action Type: BOL
Action Status: Transmittal, Notice, or Notification Received
Action Date: 4/11/2022
Response Action Outcome: Not reported

Action Type: BOL
Action Status: SHPFAC
Action Date: 5/24/2022
Response Action Outcome: Not reported

Action Type: Utility-related Abatement Measure
Action Status: Completion Statement Received
Action Date: 6/17/2022
Response Action Outcome: Not reported

Release:
Name: URAM
Address: 258 IYANNOUGH ROAD
City,State,Zip: HYANNIS, MA
Release Tracking Number/Current Status: 4-0029244 / URAM
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 03/03/2022
Category: 120 DY
Status Date: 03/09/2022
Phase: Not reported
Response Action Outcome: -
Oil / Haz Material Type: Not reported

Click here to access the MA DEP site for this facility:

URAM (Continued) **S128621468**

Actions:

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	3/3/2022
Response Action Outcome:	Not reported
Action Type:	Utility-related Abatement Measure
Action Status:	Notice of Intent to Conduct a URAM
Action Date:	3/3/2022
Response Action Outcome:	Not reported
Action Type:	Utility-related Abatement Measure
Action Status:	Notification of URAM Received
Action Date:	3/9/2022
Response Action Outcome:	Not reported
Action Type:	BOL
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	4/11/2022
Response Action Outcome:	Not reported
Action Type:	BOL
Action Status:	SHPFAC
Action Date:	5/24/2022
Response Action Outcome:	Not reported
Action Type:	Utility-related Abatement Measure
Action Status:	Completion Statement Received
Action Date:	6/17/2022
Response Action Outcome:	Not reported

Chemicals:

Chemical:	Not reported
Quantity:	Not reported
Location Type:	RIGHTOFWAY
Location Type:	UTILEASE
Source:	UST
Source:	USTOTHER
Source:	URAM

G55 **CHARTER STATION NO. 6843 FMR** **MA SHWS** **U003531068**
SSE **258 IYANOUGH RD** **MA LUST** **N/A**
1/2-1 **HYANNIS, MA 02601** **MA RELEASE**
0.616 mi.
3254 ft. **Site 2 of 2 in cluster G**

Relative:
Lower

Actual:
35 ft.

SHWS:

Name:	CHARTER STATION NO. 6843 FMR
Address:	258 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0000026
Source Type:	UNKNOWN
Release Town:	BARNSTABLE
Notification Date:	01/15/1987
Category:	NONE
Associated ID:	4-0000026
Current Status:	RAO

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Status Date:	12/17/2009
Phase:	PHASE IV
Response Action Outcome:	TF
Oil Or Haz Material:	Oil

LUST:

Facility:

Name:	CHARTER STATION NO. 6843 FMR
Address:	258 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Current Status:	**Response Action Outcome**
Release Tracking Number/Current Status:	4-0000026 / RAO
Status Date:	12/17/2009
Source Type:	UST
Release Town:	BARNSTABLE
Notification Date:	01/15/1987
Category:	NONE
Associated ID:	4-0000026
Phase:	PHASE IV
Response Action Outcome:	TF - TF
Oil Or Haz Material:	Oil
Location Type:	GASSTATION
Source:	UNKNOWN
Source:	UST

Click here to access the MA DEP site for this facility:

Chemicals:

Chemical:	GASOLINE
Quantity:	Not reported

Actions:

Action Type:	Release Disposition
Action Status:	Valid Transition Site
Action Date:	1/15/1987
Response Action Outcome:	TF
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	1/15/1991
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	RMRINT
Action Date:	1/15/2017
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Inspection and Monitoring Report Received
Action Date:	1/15/2017
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Status: Inspection and Monitoring Report Received
Action Date: 1/16/2018
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 1/16/2018
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 1/21/2010
Response Action Outcome: TF

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 1/28/2003
Response Action Outcome: TF

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 1/28/2003
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 1/4/2022
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 1/4/2022
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 1/5/2023
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 1/5/2023
Response Action Outcome: TF

Action Type: TREGS
Action Status: BWSC04
Action Date: 10/28/1994
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 10/28/1994
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 10/28/1994

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 10/28/1994
Response Action Outcome: TF

Action Type: Phase 2
Action Status: Tier 1A or Priority Submittal Approved
Action Date: 10/9/1987
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 11/13/2020
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Permit Extension Received
Action Date: 11/14/2001
Response Action Outcome: TF

Action Type: Release Abatement Measure
Action Status: Completion Statement Received
Action Date: 11/21/1994
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 12/13/2013
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 12/13/2013
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 12/14/2019
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 12/14/2019
Response Action Outcome: TF

Action Type: Phase 3
Action Status: Revised Statement or Transmittal Received
Action Date: 12/17/2009
Response Action Outcome: TF

Action Type: Phase 2
Action Status: Revised Statement or Transmittal Received
Action Date: 12/17/2009
Response Action Outcome: TF

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Type:	Phase 4
Action Status:	Written Plan Received
Action Date:	12/17/2009
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	12/17/2009
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Inspection and Monitoring Report Received
Action Date:	12/19/2011
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	RMRINT
Action Date:	12/19/2011
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	12/21/2018
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Periodic Review Opinion Evaluating Temp Solution
Action Date:	12/22/2014
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	RMRINT
Action Date:	12/22/2020
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Inspection and Monitoring Report Received
Action Date:	12/22/2020
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	12/23/2014
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	RMRINT
Action Date:	12/24/2012
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Inspection and Monitoring Report Received
Action Date:	12/24/2012
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Inspection and Monitoring Report Received

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Date: 12/24/2015
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 12/24/2015
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 12/27/2018
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 12/27/2018
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 12/29/2014
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 12/29/2014
Response Action Outcome: TF

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 2/24/1989
Response Action Outcome: TF

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 2/27/1998
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Permit Extension Received
Action Date: 3/14/2000
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Revised Statement or Transmittal Received
Action Date: 3/27/2012
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via Tier Classification Submittal
Action Date: 3/27/2012
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 5/25/1994
Response Action Outcome: TF

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 5/25/1994
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Legal Notice Published
Action Date: 5/4/2005
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Permit Extension Received
Action Date: 5/6/2005
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/12/2019
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 6/12/2019
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/13/2012
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 6/13/2012
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 6/19/2013
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/19/2013
Response Action Outcome: TF

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 6/20/1994
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/25/2014
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Date: 6/25/2014
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 6/25/2020
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/25/2020
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/28/2016
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 6/28/2016
Response Action Outcome: TF

Action Type: Release Abatement Measure
Action Status: Written Approval of Plan
Action Date: 6/29/1994
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/29/2015
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 6/29/2015
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Tier 1C Classification
Action Date: 6/5/2002
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: DEP Disagrees with Classification
Action Date: 6/5/2002
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 7/12/2010
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINI
Action Date: 7/12/2010
Response Action Outcome: TF

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 7/12/2022
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 7/12/2022
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 7/14/2014
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 7/2/2018
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 7/2/2018
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 7/20/2011
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 7/20/2011
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINI
Action Date: 7/20/2011
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 7/5/2017
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 7/5/2017
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 7/5/2021
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Date: 7/5/2021
Response Action Outcome: TF

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 8/2/1993
Response Action Outcome: TF

Action Type: Compliance and Enforcement Action
Action Status: NORA
Action Date: 8/2/1993
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Periodic Review Opinion Evaluating Temp Solution
Action Date: 8/20/2020
Response Action Outcome: TF

Action Type: Phase 2
Action Status: Notice of Delay in Meeting RA Deadline Received
Action Date: 9/16/2002
Response Action Outcome: TF

Action Type: BWS20
Action Status: APPROV
Action Date: Not reported
Response Action Outcome: TF

Release:
Name: CHARTER STATION NO. 6843 FMR
Address: 258 IYANOUGH RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0000026 / RAO
Primary ID: 4-0000026
Official City: BARNSTABLE
Notification: 01/15/1987
Category: NONE
Status Date: 12/17/2009
Phase: PHASE IV
Response Action Outcome: TF - TF
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 1/15/1987
Response Action Outcome: TF

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 1/15/1991
Response Action Outcome: TF

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 1/15/2017
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 1/15/2017
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 1/16/2018
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 1/16/2018
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 1/21/2010
Response Action Outcome: TF

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 1/28/2003
Response Action Outcome: TF

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 1/28/2003
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 1/4/2022
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 1/4/2022
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 1/5/2023
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 1/5/2023
Response Action Outcome: TF

Action Type: TREGS
Action Status: BWSC04

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Date: 10/28/1994
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 10/28/1994
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 10/28/1994
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 10/28/1994
Response Action Outcome: TF

Action Type: Phase 2
Action Status: Tier 1A or Priority Submittal Approved
Action Date: 10/9/1987
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 11/13/2020
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Permit Extension Received
Action Date: 11/14/2001
Response Action Outcome: TF

Action Type: Release Abatement Measure
Action Status: Completion Statement Received
Action Date: 11/21/1994
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 12/13/2013
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 12/13/2013
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 12/14/2019
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 12/14/2019
Response Action Outcome: TF

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Type:	Phase 3
Action Status:	Revised Statement or Transmittal Received
Action Date:	12/17/2009
Response Action Outcome:	TF
Action Type:	Phase 2
Action Status:	Revised Statement or Transmittal Received
Action Date:	12/17/2009
Response Action Outcome:	TF
Action Type:	Phase 4
Action Status:	Written Plan Received
Action Date:	12/17/2009
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	12/17/2009
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Inspection and Monitoring Report Received
Action Date:	12/19/2011
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	RMRINT
Action Date:	12/19/2011
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	12/21/2018
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Periodic Review Opinion Evaluating Temp Solution
Action Date:	12/22/2014
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	RMRINT
Action Date:	12/22/2020
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Inspection and Monitoring Report Received
Action Date:	12/22/2020
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	12/23/2014
Response Action Outcome:	TF
Action Type:	Response Action Outcome - RAO
Action Status:	RMRINT

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Date: 12/24/2012
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 12/24/2012
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 12/24/2015
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 12/24/2015
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 12/27/2018
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 12/27/2018
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 12/29/2014
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 12/29/2014
Response Action Outcome: TF

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 2/24/1989
Response Action Outcome: TF

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 2/27/1998
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Permit Extension Received
Action Date: 3/14/2000
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Revised Statement or Transmittal Received
Action Date: 3/27/2012
Response Action Outcome: TF

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via Tier Classification Submittal
Action Date: 3/27/2012
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 5/25/1994
Response Action Outcome: TF

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 5/25/1994
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Legal Notice Published
Action Date: 5/4/2005
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Permit Extension Received
Action Date: 5/6/2005
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/12/2019
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 6/12/2019
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/13/2012
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 6/13/2012
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 6/19/2013
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/19/2013
Response Action Outcome: TF

Action Type: Release Abatement Measure
Action Status: Written Plan Received

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Date: 6/20/1994
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/25/2014
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 6/25/2014
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 6/25/2020
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/25/2020
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/28/2016
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 6/28/2016
Response Action Outcome: TF

Action Type: Release Abatement Measure
Action Status: Written Approval of Plan
Action Date: 6/29/1994
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 6/29/2015
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 6/29/2015
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: Tier 1C Classification
Action Date: 6/5/2002
Response Action Outcome: TF

Action Type: Tier Classification
Action Status: DEP Disagrees with Classification
Action Date: 6/5/2002
Response Action Outcome: TF

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 7/12/2010
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINI
Action Date: 7/12/2010
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 7/12/2022
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 7/12/2022
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 7/14/2014
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 7/2/2018
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 7/2/2018
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 7/20/2011
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 7/20/2011
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINI
Action Date: 7/20/2011
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 7/5/2017
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT

CHARTER STATION NO. 6843 FMR (Continued) **U003531068**

Action Date: 7/5/2017
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 7/5/2021
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 7/5/2021
Response Action Outcome: TF

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 8/2/1993
Response Action Outcome: TF

Action Type: Compliance and Enforcement Action
Action Status: NORA
Action Date: 8/2/1993
Response Action Outcome: TF

Action Type: Response Action Outcome - RAO
Action Status: Periodic Review Opinion Evaluating Temp Solution
Action Date: 8/20/2020
Response Action Outcome: TF

Action Type: Phase 2
Action Status: Notice of Delay in Meeting RA Deadline Received
Action Date: 9/16/2002
Response Action Outcome: TF

Action Type: BWS20
Action Status: APPROV
Action Date: Not reported
Response Action Outcome: TF

Chemicals:
Chemical: GASOLINE
Quantity: Not reported
Location Type: GASSTATION
Source: UNKNOWN
Source: UST

---

56 East 1/2-1 0.644 mi. 3400 ft. **AIRPORT MOTORS INC BAP** **MA SHWS S101697462**
556 YARMOUTH RD **MA LUST N/A**
HYANNIS, MA 02601 **MA RELEASE**

Relative: Lower
Actual: 38 ft.

SHWS:
Name: NO LOCATION AID
Address: 556 YARMOUTH RD
City,State,Zip: HYANNIS, MA
Facility ID: 4-0023065
Source Type: TRANSFORM

AIRPORT MOTORS INC BAP (Continued) **S101697462**

Release Town:	BARNSTABLE
Notification Date:	01/17/2011
Category:	TWO HR
Associated ID:	Not reported
Current Status:	RAO
Status Date:	02/21/2011
Phase:	Not reported
Response Action Outcome:	A1
Oil Or Haz Material:	Oil

Name:	NO LOCATION AID
Address:	556 YARMOUTH RD
City,State,Zip:	HYANNIS, MA
Facility ID:	4-0023065
Source Type:	VEHICLE
Release Town:	BARNSTABLE
Notification Date:	01/17/2011
Category:	TWO HR
Associated ID:	Not reported
Current Status:	RAO
Status Date:	02/21/2011
Phase:	Not reported
Response Action Outcome:	A1
Oil Or Haz Material:	Oil

LUST:

Facility:

Name:	AIRPORT MOTORS INC BAP
Address:	556 YARMOUTH RD
City,State,Zip:	HYANNIS, MA 02601
Current Status:	**Response Action Outcome**
Release Tracking Number/Current Status:	4-0000873 / RAO
Status Date:	10/04/2011
Source Type:	UST
Release Town:	BARNSTABLE
Notification Date:	01/21/1997
Category:	NONE
Associated ID:	Not reported
Phase:	PHASE V
Response Action Outcome:	A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil Or Haz Material:	Not reported

Location Type:	AUTODEALER
Source:	UST

Click here to access the MA DEP site for this facility:

Chemicals:

Chemical:	UNKNOWN
Quantity:	Not reported

Actions:

Action Type:	RLFA

AIRPORT MOTORS INC BAP (Continued) **S101697462**

Action Status: FLDRUN
Action Date: 1/27/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 10/1/1993
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 10/1/1993
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Fee Received - FMCRA Use Only
Action Date: 10/18/2011
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 10/4/2011
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 11/1/2004
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 12/23/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 4
Action Status: Completion Statement Received
Action Date: 12/23/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 12/23/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Fee Not Required - Fee Credited-FMCRA Use Only
Action Date: 12/29/2011
Response Action Outcome: A permanent solution has been achieved. Contamination has not been

AIRPORT MOTORS INC BAP (Continued) **S101697462**

reduced to background.

Action Type: Phase 2
Action Status: Tier 1A or Priority Submittal Approved
Action Date: 12/5/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 2/11/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Partial RAO for this RTN
Action Status: RAO Statement Received
Action Date: 2/21/1996
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 2/22/1991
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 3/19/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 3/20/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 3/20/2007
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/20/2009
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/20/2009
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5

AIRPORT MOTORS INC BAP (Continued) **S101697462**

Action Status: Inspection and Monitoring Report Received
Action Date: 3/23/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/26/2011
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/26/2011
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/30/2010
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/30/2010
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 4
Action Status: Tier 1A or Priority Submittal Approved
Action Date: 4/11/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 4/15/1990
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 5/28/2013
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Modified Revised or Updated Plan Received
Action Date: 5/3/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 2
Action Status: Scope of Work Received
Action Date: 6/21/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has not been

AIRPORT MOTORS INC BAP (Continued) **S101697462**

reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 7/24/1990
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 7/30/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 8/16/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 8/21/2012
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 8/9/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 9/19/2007
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 9/21/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 9/22/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/22/2010
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5

AIRPORT MOTORS INC BAP (Continued) **S101697462**

Action Status: Remedy Operation Status Report Received
Action Date: 9/22/2010
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 9/25/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 9/27/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/28/2009
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/28/2009
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/29/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/29/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Release:
Name: AIRPORT MOTORS INC BAP
Address: 556 YARMOUTH RD
City,State,Zip: HYANNIS, MA 02601
Release Tracking Number/Current Status: 4-0000873 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 01/21/1997
Category: NONE
Status Date: 10/04/2011
Phase: PHASE V
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type: Not reported

AIRPORT MOTORS INC BAP (Continued) **S101697462**

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	RLFA
Action Status:	FLDRUN
Action Date:	1/27/2006
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Tier Classification
Action Status:	Tier 1A Classification
Action Date:	10/1/1993
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Tier Classification
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	10/1/1993
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Response Action Outcome - RAO
Action Status:	Fee Received - FMCRA Use Only
Action Date:	10/18/2011
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	10/4/2011
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Phase 5
Action Status:	Inspection and Monitoring Report Received
Action Date:	11/1/2004
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Immediate Response Action
Action Status:	Completion Statement Received
Action Date:	12/23/2002
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Phase 4
Action Status:	Completion Statement Received
Action Date:	12/23/2002
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Phase 5
Action Status:	Remedy Operation Status Submittal Received
Action Date:	12/23/2002
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

AIRPORT MOTORS INC BAP (Continued) **S101697462**

Action Type: Response Action Outcome - RAO
Action Status: Fee Not Required - Fee Credited-FMCRA Use Only
Action Date: 12/29/2011
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 2
Action Status: Tier 1A or Priority Submittal Approved
Action Date: 12/5/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 2/11/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Partial RAO for this RTN
Action Status: RAO Statement Received
Action Date: 2/21/1996
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 2/22/1991
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 3/19/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 3/20/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 3/20/2007
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/20/2009
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/20/2009

AIRPORT MOTORS INC BAP (Continued) **S101697462**

Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 3/23/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/26/2011
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/26/2011
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/30/2010
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/30/2010
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 4
Action Status: Tier 1A or Priority Submittal Approved
Action Date: 4/11/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 4/15/1990
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 5/28/2013
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Modified Revised or Updated Plan Received
Action Date: 5/3/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

AIRPORT MOTORS INC BAP (Continued) **S101697462**

Action Type: Phase 2
Action Status: Scope of Work Received
Action Date: 6/21/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 7/24/1990
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 7/30/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 8/16/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 8/21/2012
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 8/9/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 9/19/2007
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 9/21/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 9/22/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/22/2010

AIRPORT MOTORS INC BAP (Continued) **S101697462**

Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/22/2010
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 9/25/2003
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 9/27/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/28/2009
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/28/2009
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/29/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/29/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: UNKNOWN
Quantity: Not reported
Location Type: AUTODEALER
Source: UST

Name: NO LOCATION AID
Address: 556 YARMOUTH RD
City,State,Zip: HYANNIS, MA
Release Tracking Number/Current Status: 4-0023065 / RAO
Primary ID: Not reported
Official City: BARNSTABLE

AIRPORT MOTORS INC BAP (Continued) **S101697462**

Notification:	01/17/2011
Category:	TWO HR
Status Date:	02/21/2011
Phase:	Not reported
Response Action Outcome:	A1 - A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Oil / Haz Material Type:	Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Immediate Response Action
Action Status:	Oral Approval of Plan or Action
Action Date:	1/17/2011
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	1/17/2011
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	1/26/2011
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	RNFE
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	2/21/2011
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	2/21/2011
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Chemicals:

Chemical:	NON PCB MODF
Quantity:	50 gallons
Location Type:	ROADWAY
Location Type:	COMMERCIAL
Source:	VEHICLE
Source:	TRANSFORM

57
SE
1/2-1
0.655 mi.
3460 ft.

WARDICK REALTY TRUST BDP
143 OLD YARMOUTH RD
HYANNIS, MA 02601

MA SHWS **S106513380**
MA RELEASE **N/A**

Relative:
Lower

Actual:
28 ft.

SHWS:

Name:	WARDICK REALTY TRUST BDP
Address:	143 OLD YARMOUTH RD
City,State,Zip:	HYANNIS, MA 02601
Facility ID:	4-0000991
Source Type:	Not reported
Release Town:	BARNSTABLE
Notification Date:	01/15/1991
Category:	NONE
Associated ID:	Not reported
Current Status:	DEPNDS
Status Date:	07/23/1993
Phase:	Not reported
Response Action Outcome:	Not reported
Oil Or Haz Material:	Not reported

Name:	PENTTIS AUTOMOTIVE
Address:	143 OLD YARMOUTH RD
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0016335
Source Type:	DRUMS
Release Town:	BARNSTABLE
Notification Date:	05/21/2001
Category:	TWO HR
Associated ID:	Not reported
Current Status:	RAO
Status Date:	10/25/2002
Phase:	Not reported
Response Action Outcome:	A1
Oil Or Haz Material:	Not reported

Release:

Name:	WARDICK REALTY TRUST BDP
Address:	143 OLD YARMOUTH RD
City,State,Zip:	HYANNIS, MA 02601
Release Tracking Number/Current Status:	4-0000991 / DEPNDS
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	01/15/1991
Category:	NONE
Status Date:	07/23/1993
Phase:	Not reported
Response Action Outcome:	-
Oil / Haz Material Type:	Not reported

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Release Disposition
Action Status:	Valid Transition Site
Action Date:	1/15/1991
Response Action Outcome:	Not reported

WARDICK REALTY TRUST BDP (Continued) **S106513380**

Action Type: TREGS
Action Status: DEPNDS
Action Date: 7/23/1993
Response Action Outcome: Not reported

Chemicals:
Chemical: UNKNOWN
Quantity: Not reported

Name: PENTTIS AUTOMOTIVE
Address: 143 OLD YARMOUTH RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0016335 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 05/21/2001
Category: TWO HR
Status Date: 10/25/2002
Phase: Not reported
Response Action Outcome: A1 - A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Oil / Haz Material Type: Not reported

Click here to access the MA DEP site for this facility:

Actions:
Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 10/25/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 10/25/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 10/31/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 5/21/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 5/21/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

WARDICK REALTY TRUST BDP (Continued) **S106513380**

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 6/24/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 7/2/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Chemicals:
Chemical: UNKNOWN CHEMICAL OF UNKNOWN TYPE
Quantity: 55 gallons
Location Type: COMMERCIAL
Source: DRUMS

58
West
1/2-1
0.658 mi.
3473 ft.

CANDLE COMPANY FMR BAP **MA SHWS S106513039**
24 PLANT RD **MA RELEASE N/A**
HYANNIS, MA 02601

Relative:
Higher

Actual:
49 ft.

SHWS:
Name: CANDLE COMPANY FMR BAP
Address: 24 PLANT RD
City,State,Zip: HYANNIS, MA 02601
Facility ID: 4-0000435
Source Type: Not reported
Release Town: BARNSTABLE
Notification Date: 01/15/1988
Category: NONE
Associated ID: Not reported
Current Status: LSPNFA
Status Date: 07/29/1996
Phase: Not reported
Response Action Outcome: Not reported
Oil Or Haz Material: Not reported

Release:
Name: CANDLE COMPANY FMR BAP
Address: 24 PLANT RD
City,State,Zip: HYANNIS, MA 02601
Release Tracking Number/Current Status: 4-0000435 / LSPNFA
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 01/15/1988
Category: NONE
Status Date: 07/29/1996
Phase: Not reported
Response Action Outcome: -
Oil / Haz Material Type: Not reported

Click here to access the MA DEP site for this facility:

CANDLE COMPANY FMR BAP (Continued) **S106513039**

Actions:

Action Type:	Release Disposition
Action Status:	Valid Transition Site
Action Date:	1/15/1988
Response Action Outcome:	Not reported
Action Type:	Compliance and Enforcement Action
Action Status:	Interim Deadline Letter Issued
Action Date:	6/26/1996
Response Action Outcome:	Not reported
Action Type:	TREGS
Action Status:	LSPNFA
Action Date:	7/29/1996
Response Action Outcome:	Not reported

Chemicals:

Chemical:	UNKNOWN
Quantity:	Not reported

H59 **BP SERVICE STATION** **MA SHWS** **U001004346**
SSE **230 IYANOUGH RD** **MA RELEASE** **N/A**
1/2-1 **HYANNIS, MA 02601**
0.658 mi.
3474 ft. **Site 1 of 2 in cluster H**

Relative: **Lower**
Actual: **36 ft.**

SHWS:

Name:	BP SERVICE STATION
Address:	230 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0000392
Source Type:	UNKNOWN
Release Town:	BARNSTABLE
Notification Date:	07/15/1987
Category:	NONE
Associated ID:	Not reported
Current Status:	RAONR
Status Date:	03/27/2012
Phase:	Not reported
Response Action Outcome:	Not reported
Oil Or Haz Material:	Oil

Release:

Name:	BP SERVICE STATION
Address:	230 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0000392 / RAONR
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	07/15/1987
Category:	NONE
Status Date:	03/27/2012
Phase:	Not reported
Response Action Outcome:	-
Oil / Haz Material Type:	Oil

BP SERVICE STATION (Continued) **U001004346**

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Tier Classification
Action Status:	Permit Effective Date
Action Date:	10/21/1994
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	10/21/1994
Response Action Outcome:	Not reported
Action Type:	TREGS
Action Status:	BWSC04
Action Date:	10/21/1994
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Tier 1A Classification
Action Date:	10/21/1994
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	10/28/1994
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Permit Effective Date
Action Date:	10/28/1994
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Tier 1A Classification
Action Date:	10/28/1994
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Permit Extension Received
Action Date:	11/14/2001
Response Action Outcome:	Not reported
Action Type:	Downgradient Property Status
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	11/6/2002
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Permit Extension Received
Action Date:	3/14/2000
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Revised Statement or Transmittal Received
Action Date:	3/27/2012
Response Action Outcome:	Not reported

BP SERVICE STATION (Continued) **U001004346**

Action Type:	RAO Not Required
Action Status:	Linked to a Tier Classified Site
Action Date:	3/27/2012
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	RTN Linked to TCLASS Via Tier Classification Submittal
Action Date:	3/27/2012
Response Action Outcome:	Not reported
Action Type:	Downgradient Property Status
Action Status:	Level I - Technical Screen Audit
Action Date:	5/17/2006
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Tier 1A Classification
Action Date:	5/25/1994
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Legal Notice Published
Action Date:	5/4/2005
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Permit Extension Received
Action Date:	5/6/2005
Response Action Outcome:	Not reported
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	6/17/1987
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Tier 1C Classification
Action Date:	6/5/2002
Response Action Outcome:	Not reported
Action Type:	Compliance and Enforcement Action
Action Status:	Notice of Non-Compliance Issued
Action Date:	6/5/2002
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	DEP Disagrees with Classification
Action Date:	6/5/2002
Response Action Outcome:	Not reported
Action Type:	Release Disposition
Action Status:	Valid Transition Site
Action Date:	7/15/1987
Response Action Outcome:	Not reported
Action Type:	Phase 2
Action Status:	Scope of Work Received

BP SERVICE STATION (Continued) **U001004346**

Action Date: 8/13/1999
Response Action Outcome: Not reported

Action Type: BWS20
Action Status: APPROV
Action Date: Not reported
Response Action Outcome: Not reported

Chemicals:
Chemical: PETROLEUM
Quantity: Not reported
Location Type: GASSTATION
Source: UNKNOWN

---

60 WNW 1/2-1 0.669 mi. 3530 ft. **CYPRUS REALTY TRUST BAP** **MA SHWS S106513036**
157 AIRPORT RD **MA RELEASE N/A**
HYANNIS, MA 02601

Relative: Higher
Actual: 49 ft.

SHWS:
Name: CYPRUS REALTY TRUST BAP
Address: 157 AIRPORT RD
City,State,Zip: HYANNIS, MA 02601
Facility ID: 4-0000368
Source Type: Not reported
Release Town: BARNSTABLE
Notification Date: 07/15/1987
Category: NONE
Associated ID: Not reported
Current Status: DEPNDS
Status Date: 08/22/1996
Phase: Not reported
Response Action Outcome: Not reported
Oil Or Haz Material: Not reported

Release:
Name: CYPRUS REALTY TRUST BAP
Address: 157 AIRPORT RD
City,State,Zip: HYANNIS, MA 02601
Release Tracking Number/Current Status: 4-0000368 / DEPNDS
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 07/15/1987
Category: NONE
Status Date: 08/22/1996
Phase: Not reported
Response Action Outcome: -
Oil / Haz Material Type: Not reported

Click here to access the MA DEP site for this facility:

Actions:
Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 5/13/1993

CYPRUS REALTY TRUST BAP (Continued) **S106513036**

Response Action Outcome: Not reported

Action Type: Compliance and Enforcement Action
Action Status: Interim Deadline Letter Issued
Action Date: 6/15/1994
Response Action Outcome: Not reported

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 7/15/1987
Response Action Outcome: Not reported

Action Type: TREGS
Action Status: DEPNDS
Action Date: 8/22/1996
Response Action Outcome: Not reported

Chemicals:
Chemical: UNKNOWN
Quantity: Not reported

I61 **ROBIES REFRIGERATION** **MA SHWS S106513061**
SSE **279 YARMOUTH RD** **MA RELEASE N/A**
1/2-1 **HYANNIS, MA 02601**
0.669 mi.
3532 ft. **Site 1 of 2 in cluster I**

Relative:
Lower

Actual:
33 ft.

SHWS:
Name: ROBIES REFRIGERATION
Address: 279 YARMOUTH RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0000934
Source Type: UNKNOWN
Release Town: BARNSTABLE
Notification Date: 06/14/1990
Category: NONE
Associated ID: Not reported
Current Status: RAO
Status Date: 06/02/1997
Phase: Not reported
Response Action Outcome: B1
Oil Or Haz Material: Oil and Hazardous Material

Release:
Name: ROBIES REFRIGERATION
Address: 279 YARMOUTH RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0000934 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 06/14/1990
Category: NONE
Status Date: 06/02/1997
Phase: Not reported
Response Action Outcome: B1 - Remedial actions have not been conducted because a level of No Significant Risk exists.
Oil / Haz Material Type: Oil and Hazardous Material

ROBIES REFRIGERATION (Continued) **S106513061**

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	TREGS
Action Status:	BWSC04
Action Date:	10/17/1994
Response Action Outcome:	Remedial actions have not been conducted because a level of No Significant Risk exists.
Action Type:	Response Action Outcome - RAO
Action Status:	Tier 1A or Priority Submittal Approved
Action Date:	12/28/1998
Response Action Outcome:	Remedial actions have not been conducted because a level of No Significant Risk exists.
Action Type:	Compliance and Enforcement Action
Action Status:	Notice of Non-Compliance Issued
Action Date:	4/14/1997
Response Action Outcome:	Remedial actions have not been conducted because a level of No Significant Risk exists.
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	6/14/1990
Response Action Outcome:	Remedial actions have not been conducted because a level of No Significant Risk exists.
Action Type:	Release Disposition
Action Status:	Valid Transition Site
Action Date:	6/14/1990
Response Action Outcome:	Remedial actions have not been conducted because a level of No Significant Risk exists.
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	6/2/1997
Response Action Outcome:	Remedial actions have not been conducted because a level of No Significant Risk exists.

Chemicals:

Chemical:	UNKNOWN CHEMICAL OF TYPE - HAZARDOUS MATERIAL
Quantity:	Not reported
Chemical:	VOCS
Quantity:	Not reported
Location Type:	COMMERCIAL
Source:	UNKNOWN

62
SE
1/2-1
0.672 mi.
3547 ft.

BAP PROPERTY
47 OLD YARMOUTH RD
HYANNIS, MA 02601

MA SHWS **S106513065**
MA RELEASE **N/A**

Relative:
Lower

Actual:
33 ft.

SHWS:

Name:	BAP PROPERTY
Address:	47 OLD YARMOUTH RD
City,State,Zip:	HYANNIS, MA 02601
Facility ID:	4-0000976
Source Type:	WELL
Release Town:	BARNSTABLE
Notification Date:	09/19/1990
Category:	NONE
Associated ID:	Not reported
Current Status:	DEPNFA
Status Date:	05/24/1996
Phase:	Not reported
Response Action Outcome:	Not reported
Oil Or Haz Material:	Oil

Release:

Name:	BAP PROPERTY
Address:	47 OLD YARMOUTH RD
City,State,Zip:	HYANNIS, MA 02601
Release Tracking Number/Current Status:	4-0000976 / DEPNFA
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	09/19/1990
Category:	NONE
Status Date:	05/24/1996
Phase:	Not reported
Response Action Outcome:	-
Oil / Haz Material Type:	Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	TREGS
Action Status:	DEPNFA
Action Date:	5/24/1996
Response Action Outcome:	Not reported
Action Type:	Compliance and Enforcement Action
Action Status:	Interim Deadline Letter Issued
Action Date:	7/11/1994
Response Action Outcome:	Not reported
Action Type:	Release Disposition
Action Status:	Valid Transition Site
Action Date:	9/19/1990
Response Action Outcome:	Not reported
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	9/19/1990
Response Action Outcome:	Not reported

BAP PROPERTY (Continued) **S106513065**

Chemicals:
- Chemical: VOCS
- Quantity: Not reported
- Source: WELL

H63 **MASS COASTAL RAILROAD** **MA SHWS** **S117405745**
SSE **215 IYANNOUGH RD** **MA RELEASE** **N/A**
1/2-1 **HYANNIS, MA**
0.674 mi.
3558 ft. **Site 2 of 2 in cluster H**

Relative: Lower
Actual: 36 ft.

SHWS:
- Name: MASS COASTAL RAILROAD
- Address: 215 IYANNOUGH RD
- City,State,Zip: HYANNIS, MA
- Facility ID: 4-0025408
- Source Type: FUELTANK
- Release Town: BARNSTABLE
- Notification Date: 11/19/2014
- Category: TWO HR
- Associated ID: Not reported
- Current Status: PSC
- Status Date: 01/21/2015
- Phase: Not reported
- Response Action Outcome: PC
- Oil Or Haz Material: Oil

- Name: MASS COASTAL RAILROAD
- Address: 215 IYANNOUGH RD
- City,State,Zip: HYANNIS, MA
- Facility ID: 4-0025408
- Source Type: LOCOMOTIVE
- Release Town: BARNSTABLE
- Notification Date: 11/19/2014
- Category: TWO HR
- Associated ID: Not reported
- Current Status: PSC
- Status Date: 01/21/2015
- Phase: Not reported
- Response Action Outcome: PC
- Oil Or Haz Material: Oil

Release:
- Name: MASS COASTAL RAILROAD
- Address: 215 IYANNOUGH RD
- City,State,Zip: HYANNIS, MA
- Release Tracking Number/Current Status: 4-0025408 / PSC
- Primary ID: Not reported
- Official City: BARNSTABLE
- Notification: 11/19/2014
- Category: TWO HR
- Status Date: 01/21/2015
- Phase: Not reported
- Response Action Outcome: PC - PC
- Oil / Haz Material Type: Oil

MASS COASTAL RAILROAD (Continued) **S117405745**

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	BOL
Action Status:	SHPTMP
Action Date:	1/13/2015
Response Action Outcome:	PC
Action Type:	RNFE
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	1/18/2015
Response Action Outcome:	PC
Action Type:	Response Action Outcome - RAO
Action Status:	PSCRCD
Action Date:	1/21/2015
Response Action Outcome:	PC
Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	1/23/2015
Response Action Outcome:	PC
Action Type:	Immediate Response Action
Action Status:	Oral Approval of Plan or Action
Action Date:	11/19/2014
Response Action Outcome:	PC
Action Type:	RLFA
Action Status:	FOLOFF
Action Date:	11/19/2014
Response Action Outcome:	PC
Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	11/19/2014
Response Action Outcome:	PC
Action Type:	RLFA
Action Status:	FLDD1U
Action Date:	11/20/2014
Response Action Outcome:	PC
Action Type:	BOL
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	12/18/2014
Response Action Outcome:	PC
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	12/18/2014
Response Action Outcome:	PC
Action Type:	RLFA
Action Status:	FOLOFF
Action Date:	12/8/2014
Response Action Outcome:	PC

MASS COASTAL RAILROAD (Continued) **S117405745**

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 12/8/2014
Response Action Outcome: PC

Chemicals:
Chemical: DIESEL FUEL
Quantity: 100 gallons
Location Type: RIGHTOFWAY
Location Type: COMMERCIAL
Source: FUELTANK
Source: LOCOMOTIVE

I64 **HYANNIS WATER TREATMENT PLANT** **MA SHWS** **S114557227**
SE **15 OLD YARMOUTH ROAD** **MA RELEASE** **N/A**
1/2-1 **HYANNIS, MA 02601** **MA TIER 2**
0.678 mi.
3578 ft. **Site 2 of 2 in cluster I**

Relative:
Lower

Actual:
32 ft.

SHWS:
Name: HYANNIS WATER TREATMENT PLANT
Address: 15 OLD YARMOUTH ROAD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0025602
Source Type: DRUMS
Release Town: BARNSTABLE
Notification Date: 05/07/2015
Category: TWO HR
Associated ID: Not reported
Current Status: PSNC
Status Date: 07/06/2015
Phase: Not reported
Response Action Outcome: PN
Oil Or Haz Material: Hazardous Material

Release:
Name: HYANNIS WATER TREATMENT PLANT
Address: 15 OLD YARMOUTH ROAD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0025602 / PSNC
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 05/07/2015
Category: TWO HR
Status Date: 07/06/2015
Phase: Not reported
Response Action Outcome: PN - PN
Oil / Haz Material Type: Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 5/7/2015
Response Action Outcome: PN

HYANNIS WATER TREATMENT PLANT (Continued) **S114557227**

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 5/7/2015
Response Action Outcome: PN

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 6/4/2015
Response Action Outcome: PN

Action Type: RNFE
Action Status: Transmittal, Notice, or Notification Received
Action Date: 7/2/2015
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: PSNRCD
Action Date: 7/6/2015
Response Action Outcome: PN

Chemicals:
Chemical: SODIUM HYPOCHLORITE
Quantity: 25 gallons
Location Type: MUNICIPAL
Source: DRUMS

TIER 2:
Name: MAHER TREATMENT PLANT
Address: 15 OLD YARMOUTH ROAD
City,State,Zip: HYANNIS, MA 02601
Report Year: 2015
Facility Id: FATR2015000000005568
Facility Dept: Not reported
Latitude: 41.6632
Longitude: -70.273
Mailing Address: 45 Old Yarmouth Road
Mailing City/State/Zip: 02601
Mailing Country: United States
Notes: Not reported
All Chemicals Same As Last Yr: Not reported
Date Signed: 01/27/2016
Dike Or Other Safeguard: F
Failed Validation: Not reported
Date Modified: 05/19/2016
Fees Total: Not reported
Num Of Employees: 2
Site Coord Abbreviated?: F
Site Map: T
State Label Code: Not reported
Submitted By: Mark LaVoie
Validation Report: Not reported
Fire District: Not reported
Latlong Location Description: Not reported
Latlong Method: Not reported

65 SSW 1/2-1 0.701 mi. 3701 ft.

SPARTAN CLEANERS
242 BARNSTABLE RD
HYANNIS, MA 02601

RCRA-VSQG 1000369852
MA SHWS MAD019412147
MA RELEASE
MA DRYCLEANERS
MA HW GEN

Relative: Higher

Actual: 40 ft.

RCRA Listings:

Date Form Received by Agency:	20200213
Handler Name:	Spartan Cleaners
Handler Address:	242 BARNSTABLE RD
Handler City,State,Zip:	HYANNIS, MA 02601
EPA ID:	MAD019412147
Contact Name:	DENNIS P KARUKAS
Contact Address:	BARNSTABLE RD
Contact City,State,Zip:	HYANNIS, MA 02601
Contact Telephone:	508-776-2595 x1
Contact Fax:	Not reported
Contact Email:	SPARTANCLEANERSCAPECOD@YAHOO.COM
Contact Title:	PRESIDENT
EPA Region:	01
Land Type:	Private
Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities, State-specific Activities
State District Owner:	Ma
State District:	SE
Mailing Address:	BARNSTABLE RD
Mailing City,State,Zip:	HYANNIS, MA 02601
Owner Name:	Dennis Karukas
Owner Type:	Private
Operator Name:	Dennis Karukas
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	--Y
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No

SPARTAN CLEANERS (Continued) **1000369852**

Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20200213
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	Ignitable Waste
Waste Code:	D007
Waste Description:	Chromium
Waste Code:	D039
Waste Description:	Tetrachloroethylene
Waste Code:	D040
Waste Description:	Trichlorethylene
Waste Code:	F002
Waste Description:	The Following Spent Halogenated Solvents: Tetrachloroethylene, Methylene Chloride, Trichloroethylene, 1,1,1-Trichloroethane, Chlorobenzene, 1,1,2-Trichloro-1,2,2-Trifluoroethane, Ortho-Dichlorobenzene, Trichlorofluoromethane, And 1,1,2, Trichloroethane; All Spent Solvent Mixtures/Blends Containing, Before Use, A Total Of Ten Percent Or More (By Volume) Of One Or More Of The Above Halogenated Solvents Or Those Solvents Listed In F001, F004, And F005; And Still Bottoms From The Recovery Of These Spent Solvents And Spent Solvent Mixtures.

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: DENNIS KARUKAS	
Legal Status:	Private
Date Became Current:	20200213
Date Ended Current:	Not reported
Owner/Operator Address:	242 BARNSTABLE RD
Owner/Operator City,State,Zip:	HYANNIS, MA 02601
Owner/Operator Telephone:	508-775-8119
Owner/Operator Telephone Ext:	1
Owner/Operator Fax:	Not reported
Owner/Operator Email:	SPARTANCLEANERSCAPECOD@YAHOO.COM
Owner/Operator Indicator:	Operator
Owner/Operator Name: DENNIS KARUKAS	

SPARTAN CLEANERS (Continued) **1000369852**

Legal Status: Private
Date Became Current: 20200213
Date Ended Current: Not reported
Owner/Operator Address: 242 BARNSTABLE RD
Owner/Operator City,State,Zip: HYANNIS, MA 02601
Owner/Operator Telephone: 508-775-8119
Owner/Operator Telephone Ext: 1
Owner/Operator Fax: Not reported
Owner/Operator Email: SPARTANCLEANERSCAPECOD@YAHOO.COM

Owner/Operator Indicator: Operator
Owner/Operator Name: SPARTAN CLEANERS INC
Legal Status: Private
Date Became Current: 19911208
Date Ended Current: Not reported
Owner/Operator Address: 242 BARNSTABLE RD
Owner/Operator City,State,Zip: HYANNIS, MA 02601
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 19821209
Handler Name: SPARTAN CLEANERS INC
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Ma
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20200213
Handler Name: SPARTAN CLEANERS
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Ma
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:
NAICS Code: 81232
NAICS Description: DRYCLEANING AND LAUNDRY SERVICES (EXCEPT COIN-OPERATED)

Has the Facility Received Notices of Violations:
Found Violation: No
Agency Which Determined Violation: Not reported

SPARTAN CLEANERS (Continued) **1000369852**

Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Evaluation Action Summary:

Evaluation Date:	20000302
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	JJLMA
Evaluation Responsible Sub-Organization:	SE
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

SHWS:

Name:	SPARTAN CLEANERS
Address:	242 BARNSTABLE ROAD
City,State,Zip:	HYANNIS, MA
Facility ID:	4-0025162

SPARTAN CLEANERS (Continued) **1000369852**

Source Type: UNKNOWN
Release Town: BARNSTABLE
Notification Date: 06/04/2014
Category: 72 HR
Associated ID: Not reported
Current Status: RAONR
Status Date: 08/04/2014
Phase: Not reported
Response Action Outcome: Not reported
Oil Or Haz Material: Hazardous Material

Name: SPARTAN CLEANERS
Address: 242 BARNSTABLE ROAD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0024672
Source Type: UNKNOWN
Release Town: BARNSTABLE
Notification Date: 08/08/2013
Category: 120 DY
Associated ID: 4-0024672
Current Status: PSNC
Status Date: 04/10/2019
Phase: PHASE IV
Response Action Outcome: PN
Oil Or Haz Material: Hazardous Material

Release:
Name: SPARTAN CLEANERS
Address: 242 BARNSTABLE ROAD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0024672 / PSNC
Primary ID: 4-0024672
Official City: BARNSTABLE
Notification: 08/08/2013
Category: 120 DY
Status Date: 04/10/2019
Phase: PHASE IV
Response Action Outcome: PN - PN
Oil / Haz Material Type: Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Phase 4
Action Status: Level I - Technical Screen Audit
Action Date: 10/18/2018
Response Action Outcome: PN

Action Type: Phase 4
Action Status: RMRINI
Action Date: 12/14/2018
Response Action Outcome: PN

Action Type: Phase 4
Action Status: Status or Interim Report Received
Action Date: 12/14/2018

SPARTAN CLEANERS (Continued) **1000369852**

Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 4/10/2019
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: PSNRCD
Action Date: 4/10/2019
Response Action Outcome: PN

Action Type: Phase 4
Action Status: Completion Statement Received
Action Date: 4/10/2019
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: TIERI
Action Date: 6/13/2014
Response Action Outcome: PN

Action Type: Phase 1
Action Status: Completion Statement Received
Action Date: 6/13/2014
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 6/13/2014
Response Action Outcome: PN

Action Type: Phase 4
Action Status: Written Plan Received
Action Date: 6/14/2018
Response Action Outcome: PN

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 6/16/2017
Response Action Outcome: PN

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 6/16/2017
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: Legal Notice Published
Action Date: 7/15/2014
Response Action Outcome: PN

Action Type: Phase 2
Action Status: Level I - Technical Screen Audit
Action Date: 8/1/2017
Response Action Outcome: PN

SPARTAN CLEANERS (Continued) **1000369852**

Action Type: Phase 3
Action Status: Level I - Technical Screen Audit
Action Date: 8/1/2017
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via IRA Completion Statement
Action Date: 8/4/2014
Response Action Outcome: PN

Action Type: RLFA
Action Status: FLDRUN
Action Date: 8/6/2019
Response Action Outcome: PN

Action Type: RNFE
Action Status: Transmittal, Notice, or Notification Received
Action Date: 8/8/2013
Response Action Outcome: PN

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 8/8/2013
Response Action Outcome: PN

Chemicals:
Chemical: PERCHLOROETHYLENE
Quantity: 13.5 micrograms per liter
Source: UNKNOWN

Name: SPARTAN CLEANERS
Address: 242 BARNSTABLE ROAD
City,State,Zip: HYANNIS, MA
Release Tracking Number/Current Status: 4-0025162 / RAONR
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 06/04/2014
Category: 72 HR
Status Date: 08/04/2014
Phase: Not reported
Response Action Outcome: -
Oil / Haz Material Type: Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Tier Classification
Action Status: TIERI
Action Date: 6/13/2014
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 6/13/2014
Response Action Outcome: Not reported

SPARTAN CLEANERS (Continued) **1000369852**

Action Type: Immediate Response Action
Action Status: IRA Conducted Prior to Notification
Action Date: 6/4/2014
Response Action Outcome: Not reported

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 6/4/2014
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Legal Notice Published
Action Date: 7/15/2014
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Level I - Technical Screen Audit
Action Date: 8/26/2014
Response Action Outcome: Not reported

Action Type: RAO Not Required
Action Status: Linked to a Tier Classified Site
Action Date: 8/4/2014
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 8/4/2014
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via IRA Completion Statement
Action Date: 8/4/2014
Response Action Outcome: Not reported

Action Type: RNFE
Action Status: Transmittal, Notice, or Notification Received
Action Date: 8/4/2014
Response Action Outcome: Not reported

Chemicals:
Chemical: PERCHLOROETHYLENE
Quantity: 20 micrograms per liter
Location Type: COMMERCIAL
Source: UNKNOWN

DRYCLEANERS:
Name: SPARTAN CLEANERS INC
Address: 242 BARNSTABLE RD
City,State,Zip: HYANNIS, MA 026010000
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 28099
Classification Type: Non-applicability classification--still in business but not using perc
Reg Obj Contact: Not reported
Reg Obj Mail Address: Not reported
Mail Town Name: Not reported

SPARTAN CLEANERS (Continued) **1000369852**

Mail Zip Code: Not reported
DEP Region Code: SE
Mailing State: Not reported
Reg Obj Phone: Not reported

HW GEN:
Name: SPARTAN CLEANERS INC
Address: 242 BARNSTABLE RD
City,State,Zip: HYANNIS, MA 02601
EPA Id: MAD019412147
RCRA Generator Status: VSQG
State Generator Status: VQG-MA

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66 **CAPE DAIRY** **MA SHWS S106513094**
SE **44 BODICK RD** **MA RELEASE N/A**
1/2-1 **HYANNIS, MA 02601**
0.705 mi.
3720 ft.

Relative: Lower

Actual: 27 ft.

SHWS:
Name: CAPE DAIRY
Address: 44 BODICK RD
City,State,Zip: HYANNIS, MA 02601
Facility ID: 4-0010059
Source Type: FUELTANK
Release Town: BARNSTABLE
Notification Date: 10/28/1993
Category: TWO HR
Associated ID: Not reported
Current Status: RAO
Status Date: 01/31/1995
Phase: Not reported
Response Action Outcome: A2
Oil Or Haz Material: Oil

Release:
Name: CAPE DAIRY
Address: 44 BODICK RD
City,State,Zip: HYANNIS, MA 02601
Release Tracking Number/Current Status: 4-0010059 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 10/28/1993
Category: TWO HR
Status Date: 01/31/1995
Phase: Not reported
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 1/31/1995

CAPE DAIRY (Continued) **S106513094**

Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 1/31/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 10/28/1993
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 10/28/1993
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 10/28/1993
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 11/8/1993
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 12/17/1993
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Fee Received - FMCRA Use Only
Action Date: 2/7/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: An activity type that is related to an Audit
Action Status: NOA
Action Date: 8/9/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 9/23/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

CAPE DAIRY (Continued) **S106513094**

Action Type: An activity type that is related to an Audit
Action Status: NAFVIO
Action Date: 9/27/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: An activity type that is related to an Audit
Action Status: NAFNVD
Action Date: 9/27/1995
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: DIESEL FUEL
Quantity: 30 gallons
Location Type: COMMERCIAL
Source: FUELTANK

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67 South 1/2-1 0.718 mi. 3793 ft.
Relative: Lower
Actual: 36 ft.

BUCKLERS TOWING SERVICE INC **MA SHWS S110684501**
116 RIDGEWOOD AVE **MA RELEASE N/A**
HYANNIS, MA 02601 **MA HW GEN**

SHWS:
Name: BUCKLER TOWING
Address: 116 RIDGEWOOD AVE
City,State,Zip: HYANNIS, MA
Facility ID: 4-0023016
Source Type: TANKER
Release Town: BARNSTABLE
Notification Date: 12/16/2010
Category: TWO HR
Associated ID: Not reported
Current Status: RAO
Status Date: 01/25/2011
Phase: Not reported
Response Action Outcome: A2
Oil Or Haz Material: Oil

Release:
Name: BUCKLER TOWING
Address: 116 RIDGEWOOD AVE
City,State,Zip: HYANNIS, MA
Release Tracking Number/Current Status: 4-0023016 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 12/16/2010
Category: TWO HR
Status Date: 01/25/2011
Phase: Not reported
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type: Oil

BUCKLERS TOWING SERVICE INC (Continued) **S110684501**

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	1/25/2011
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	RNFE
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	1/25/2011
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	1/7/2011
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	RLFA
Action Status:	FLDD1U
Action Date:	12/16/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	12/16/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Immediate Response Action
Action Status:	Oral Approval of Plan or Action
Action Date:	12/16/2010
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	2/4/2011
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:

Chemical:	#2 FUEL OIL
Quantity:	90 gallons
Location Type:	COMMERCIAL
Source:	TANKER

HW GEN:

Name:	BUCKLERS TOWING SERVICE INC
Address:	116 RIDGEWOOD AVE
City,State,Zip:	HYANNIS, MA 02601
EPA Id:	MAR000603050

BUCKLERS TOWING SERVICE INC (Continued) **S110684501**

RCRA Generator Status: SQG
State Generator Status: SQG-MA

68
SSW
1/2-1
0.720 mi.
3801 ft.

NO LOCATION AID
296 WINTER ST
HYANNIS, MA 02601

MA SHWS **S106617701**
MA LUST **N/A**
MA RELEASE
MA UIC

Relative:
Higher

Actual:
41 ft.

SHWS:

Name:	NO LOCATION AID
Address:	296 WINTER ST
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0018675
Source Type:	TANKER
Release Town:	BARNSTABLE
Notification Date:	09/10/2004
Category:	120 DY
Associated ID:	Not reported
Current Status:	PSNC
Status Date:	03/23/2018
Phase:	PHASE V
Response Action Outcome:	PN
Oil Or Haz Material:	Oil

LUST:

Facility:

Name:	NO LOCATION AID
Address:	296 WINTER ST
City,State,Zip:	HYANNIS, MA 026010000
Current Status:	**Permanent Solution with No Conditions**
Release Tracking Number/Current Status:	4-0018675 / PSNC
Status Date:	03/23/2018
Source Type:	UST
Release Town:	BARNSTABLE
Notification Date:	09/10/2004
Category:	120 DY
Associated ID:	Not reported
Phase:	PHASE V
Response Action Outcome:	PN - PN
Oil Or Haz Material:	Oil

Source:	TANKER
Source:	UST

Click here to access the MA DEP site for this facility:

Chemicals:

Chemical:	AROMATIC HYDROCARBONS C11 THRU C22
Quantity:	12400 parts per billion
Chemical:	ALIPHATIC HYDROCARBONS C9 THRU C18
Quantity:	2330 parts per million
Chemical:	ALIPHATIC HYDROCARBONS C9 THRU C18
Quantity:	54200 parts per billion

NO LOCATION AID (Continued) **S106617701**

Chemical: AROMATIC HYDROCARBONS C11 THRU C22
Quantity: 733 parts per million

Actions:

Action Type: Release Abatement Measure
Action Status: Fee Received - FMCRA Use Only
Action Date: 1/24/2005
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 1/25/2005
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 1/29/2007
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Level I - Technical Screen Audit
Action Date: 10/25/2016
Response Action Outcome: PN

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 12/9/2004
Response Action Outcome: PN

Action Type: RLFA
Action Status: FLDRUN
Action Date: 2/14/2012
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 2/3/2009
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Level I - Technical Screen Audit
Action Date: 2/6/2007
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: RMRINT
Action Date: 3/16/2011
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 3/16/2011
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/17/2017
Response Action Outcome: PN

NO LOCATION AID (Continued) **S106617701**

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/17/2017
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/2/2012
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: RMRINT
Action Date: 3/2/2012
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/20/2013
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/20/2013
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/20/2014
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/20/2014
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/20/2015
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/20/2015
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/21/2012
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/21/2012
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT

NO LOCATION AID (Continued) **S106617701**

Action Date: 3/21/2016
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/21/2016
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/22/2010
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/22/2010
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: PSNRCD
Action Date: 3/23/2018
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Completion Statement Received
Action Date: 3/23/2018
Response Action Outcome: PN

Action Type: An activity type that is related to an Audit
Action Status: NAFNVD
Action Date: 3/5/2012
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Level II - Audit Inspection
Action Date: 3/5/2012
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 5/15/2006
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Level I - Technical Screen Audit
Action Date: 6/2/2006
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 8/21/2008
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 9/1/2006
Response Action Outcome: PN

NO LOCATION AID (Continued) **S106617701**

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 9/10/2004
Response Action Outcome: PN

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 9/10/2004
Response Action Outcome: PN

Action Type: Phase 4
Action Status: Written Plan Received
Action Date: 9/15/2008
Response Action Outcome: PN

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 9/17/2007
Response Action Outcome: PN

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 9/17/2007
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Completion Statement Received
Action Date: 9/17/2009
Response Action Outcome: PN

Action Type: Phase 4
Action Status: Completion Statement Received
Action Date: 9/17/2009
Response Action Outcome: PN

Action Type: Phase 4
Action Status: RMRINI
Action Date: 9/17/2009
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Work Started
Action Date: 9/17/2009
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/17/2014
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/17/2014
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT

NO LOCATION AID (Continued) **S106617701**

Action Date: 9/18/2012
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/18/2012
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/19/2013
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/19/2013
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/19/2016
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/19/2016
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/22/2011
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/22/2017
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/22/2017
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/24/2015
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/24/2015
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Level I - Technical Screen Audit
Action Date: 9/7/2006
Response Action Outcome: PN

NO LOCATION AID (Continued) **S106617701**

Action Type: Phase 1
Action Status: Completion Statement Received
Action Date: 9/9/2005
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: Legal Notice Published
Action Date: 9/9/2005
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: Tier 1C Classification
Action Date: 9/9/2005
Response Action Outcome: PN

Action Type: Phase 2
Action Status: Scope of Work Received
Action Date: 9/9/2005
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 9/9/2005
Response Action Outcome: PN

Action Type: BWS03
Action Status: APPROV
Action Date: Not reported
Response Action Outcome: PN

Release:
Name: NO LOCATION AID
Address: 296 WINTER ST
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0018675 / PSNC
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 09/10/2004
Category: 120 DY
Status Date: 03/23/2018
Phase: PHASE V
Response Action Outcome: PN - PN
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Release Abatement Measure
Action Status: Fee Received - FMCRA Use Only
Action Date: 1/24/2005
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 1/25/2005

NO LOCATION AID (Continued) **S106617701**

Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 1/29/2007
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Level I - Technical Screen Audit
Action Date: 10/25/2016
Response Action Outcome: PN

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 12/9/2004
Response Action Outcome: PN

Action Type: RLFA
Action Status: FLDRUN
Action Date: 2/14/2012
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 2/3/2009
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Level I - Technical Screen Audit
Action Date: 2/6/2007
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: RMRINT
Action Date: 3/16/2011
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 3/16/2011
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 3/17/2017
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/17/2017
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/2/2012
Response Action Outcome: PN

NO LOCATION AID (Continued) **S106617701**

Action Type:	Response Action Outcome - RAO
Action Status:	RMRINT
Action Date:	3/2/2012
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	3/20/2013
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	3/20/2013
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	3/20/2014
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	3/20/2014
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	3/20/2015
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	3/20/2015
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	3/21/2012
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	3/21/2012
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	3/21/2016
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	3/21/2016
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	RMRINT

NO LOCATION AID (Continued) **S106617701**

Action Date: 3/22/2010
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 3/22/2010
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: PSNRCD
Action Date: 3/23/2018
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Completion Statement Received
Action Date: 3/23/2018
Response Action Outcome: PN

Action Type: An activity type that is related to an Audit
Action Status: NAFNVD
Action Date: 3/5/2012
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Level II - Audit Inspection
Action Date: 3/5/2012
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 5/15/2006
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Level I - Technical Screen Audit
Action Date: 6/2/2006
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 8/21/2008
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 9/1/2006
Response Action Outcome: PN

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 9/10/2004
Response Action Outcome: PN

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 9/10/2004
Response Action Outcome: PN

NO LOCATION AID (Continued) **S106617701**

Action Type:	Phase 4
Action Status:	Written Plan Received
Action Date:	9/15/2008
Response Action Outcome:	PN
Action Type:	Phase 2
Action Status:	Completion Statement Received
Action Date:	9/17/2007
Response Action Outcome:	PN
Action Type:	Phase 3
Action Status:	Completion Statement Received
Action Date:	9/17/2007
Response Action Outcome:	PN
Action Type:	Release Abatement Measure
Action Status:	Completion Statement Received
Action Date:	9/17/2009
Response Action Outcome:	PN
Action Type:	Phase 4
Action Status:	Completion Statement Received
Action Date:	9/17/2009
Response Action Outcome:	PN
Action Type:	Phase 4
Action Status:	RMRINI
Action Date:	9/17/2009
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Work Started
Action Date:	9/17/2009
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	9/17/2014
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	9/17/2014
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	9/18/2012
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	9/18/2012
Response Action Outcome:	PN
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received

NO LOCATION AID (Continued) **S106617701**

Action Date: 9/19/2013
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/19/2013
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/19/2016
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/19/2016
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/22/2011
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/22/2017
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/22/2017
Response Action Outcome: PN

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 9/24/2015
Response Action Outcome: PN

Action Type: Phase 5
Action Status: RMRINT
Action Date: 9/24/2015
Response Action Outcome: PN

Action Type: Release Abatement Measure
Action Status: Level I - Technical Screen Audit
Action Date: 9/7/2006
Response Action Outcome: PN

Action Type: Phase 1
Action Status: Completion Statement Received
Action Date: 9/9/2005
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: Legal Notice Published
Action Date: 9/9/2005
Response Action Outcome: PN

NO LOCATION AID (Continued) **S106617701**

Action Type:	Tier Classification
Action Status:	Tier 1C Classification
Action Date:	9/9/2005
Response Action Outcome:	PN
Action Type:	Phase 2
Action Status:	Scope of Work Received
Action Date:	9/9/2005
Response Action Outcome:	PN
Action Type:	Tier Classification
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	9/9/2005
Response Action Outcome:	PN
Action Type:	BWS03
Action Status:	APPROV
Action Date:	Not reported
Response Action Outcome:	PN

Chemicals:

Chemical:	AROMATIC HYDROCARBONS C11 THRU C22
Quantity:	12400 parts per billion
Chemical:	ALIPHATIC HYDROCARBONS C9 THRU C18
Quantity:	2330 parts per million
Chemical:	ALIPHATIC HYDROCARBONS C9 THRU C18
Quantity:	54200 parts per billion
Chemical:	AROMATIC HYDROCARBONS C11 THRU C22
Quantity:	733 parts per million
Source:	TANKER
Source:	UST

UIC:

RTN Number:	4-0018675
Name:	BEARSE, SCOTT
Address:	296 WINTER ST
City,State,Zip:	HYANNIS, MA 026010000
Permit Date:	09/22/2017
Actor Name:	Not reported
Air Sparging:	No
Injection Well:	Yes/Inactive
ReInjection Well:	No
UIC APL Type:	Not reported
Latitude:	41.65996433
Well Status:	Not reported
Longitude:	-70.28595571
UIC ID:	Not reported
EPA Code:	Not reported
Indicates Area:	Not reported
Number of Wells:	Not reported
Owner:	Not reported
Receive Date:	Not reported
Authorization to Install/Close Date:	Not reported
Confirmation of Install Receive:	Not reported
Post-Closure Receive:	Not reported
Final Approval Date:	Not reported

NO LOCATION AID (Continued) **S106617701**

Permit Number:	Not reported
Permit Type:	Not reported
Permit Type Description:	Not reported
Program:	Not reported
Applicant Name:	Not reported
Decision Date:	Not reported
Operator Name:	SCOTT BEARSE
Well ID:	Not reported
Well Type Name:	Not reported
Max Well Depth:	Not reported
Date Complete:	Not reported
Work Performed:	Not reported
Depth to Bedrock:	Not reported
Water Level:	Not reported

69
WNW
1/2-1
0.720 mi.
3802 ft.

BARBYANNS PUB
120 AIRPORT RD
HYANNIS, MA

MA SHWS **S120630504**
MA RELEASE **N/A**

Relative:
Higher

Actual:
53 ft.

SHWS:

Name:	BARBYANNS PUB
Address:	120 AIRPORT RD
City,State,Zip:	HYANNIS, MA
Facility ID:	4-0026692
Source Type:	VEHICLE
Release Town:	BARNSTABLE
Notification Date:	06/05/2017
Category:	TWO HR
Associated ID:	Not reported
Current Status:	PSNC
Status Date:	07/19/2017
Phase:	Not reported
Response Action Outcome:	PN
Oil Or Haz Material:	Not reported

Release:

Name:	BARBYANNS PUB
Address:	120 AIRPORT RD
City,State,Zip:	HYANNIS, MA
Release Tracking Number/Current Status:	4-0026692 / PSNC
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	06/05/2017
Category:	TWO HR
Status Date:	07/19/2017
Phase:	Not reported
Response Action Outcome:	PN - PN
Oil / Haz Material Type:	Not reported

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	BOL
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	6/15/2017

BARBYANNS PUB (Continued) **S120630504**

Response Action Outcome: PN

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 6/5/2017
Response Action Outcome: PN

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 6/5/2017
Response Action Outcome: PN

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 7/10/2017
Response Action Outcome: PN

Action Type: BOL
Action Status: SHPFAC
Action Date: 7/17/2017
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: PSNRCD
Action Date: 7/19/2017
Response Action Outcome: PN

Action Type: RNFE
Action Status: Transmittal, Notice, or Notification Received
Action Date: 7/19/2017
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 7/28/2017
Response Action Outcome: PN

Chemicals:
Chemical: Not reported
Quantity: Not reported
Location Type: COMMERCIAL
Source: VEHICLE

J70 **GRANDPAS USED BIKES** **MA SHWS S102687528**
SSE **210 YARMOUTH RD** **MA RELEASE N/A**
1/2-1 **BARNSTABLE, MA 02630**
0.748 mi.
3950 ft. **Site 1 of 3 in cluster J**

Relative:
Lower

Actual:
32 ft.

SHWS:
Name: GRANDPAS USED BIKES
Address: 210 YARMOUTH RD
City,State,Zip: BARNSTABLE, MA 026300000
Facility ID: 4-0013201
Source Type: UNKNOWN
Release Town: BARNSTABLE
Notification Date: 07/18/1997

GRANDPAS USED BIKES (Continued) **S102687528**

Category: 120 DY
Associated ID: Not reported
Current Status: DPS
Status Date: 01/30/1998
Phase: Not reported
Response Action Outcome: Not reported
Oil Or Haz Material: Oil and Hazardous Material

Release:
Name: GRANDPAS USED BIKES
Address: 210 YARMOUTH RD
City,State,Zip: BARNSTABLE, MA 026300000
Release Tracking Number/Current Status: 4-0013201 / DPS
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 07/18/1997
Category: 120 DY
Status Date: 01/30/1998
Phase: Not reported
Response Action Outcome: -
Oil / Haz Material Type: Oil and Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Downgradient Property Status
Action Status: Fee Received - FMCRA Use Only
Action Date: 1/30/1998
Response Action Outcome: Not reported

Action Type: Downgradient Property Status
Action Status: Transmittal, Notice, or Notification Received
Action Date: 1/30/1998
Response Action Outcome: Not reported

Action Type: Downgradient Property Status
Action Status: Level I - Technical Screen Audit
Action Date: 2/6/2006
Response Action Outcome: Not reported

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 7/18/1997
Response Action Outcome: Not reported

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 8/12/1997
Response Action Outcome: Not reported

Chemicals:
Chemical: NAPTHALENE, BETA-CHLORO
Quantity: 230 parts per billion
Chemical: TPH
Quantity: 3.5 parts per million
Location Type: COMMERCIAL

GRANDPAS USED BIKES (Continued) **S102687528**

Source: UNKNOWN

J71 **MOBIL SERVICE STATION NO 11636** **MA SHWS** **S106513357**
SSE **156 IYANOUGH RD** **MA LUST** **N/A**
1/2-1 **HYANNIS, MA 02601** **MA RELEASE**
0.752 mi.
3969 ft. **Site 2 of 3 in cluster J**

Relative:
Lower

Actual:
32 ft.

SHWS:

Name:	BARNSTABLE MOBIL STATION
Address:	156 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0013422
Source Type:	PIPE
Release Town:	BARNSTABLE
Notification Date:	10/09/1997
Category:	72 HR
Associated ID:	4-0013422
Current Status:	RAO
Status Date:	01/23/2006
Phase:	Not reported
Response Action Outcome:	A2
Oil Or Haz Material:	Oil

Name:	AIRPORT MOBIL
Address:	156 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0015997
Source Type:	VEHICLE
Release Town:	BARNSTABLE
Notification Date:	01/23/2001
Category:	TWO HR
Associated ID:	Not reported
Current Status:	RAONR
Status Date:	06/01/2001
Phase:	Not reported
Response Action Outcome:	Not reported
Oil Or Haz Material:	Oil

Name:	MOBIL SERVICE STATION NO 11636
Address:	156 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0018891
Source Type:	Not reported
Release Town:	BARNSTABLE
Notification Date:	01/21/2005
Category:	120 DY
Associated ID:	Not reported
Current Status:	RAO
Status Date:	01/23/2006
Phase:	Not reported
Response Action Outcome:	A2
Oil Or Haz Material:	Oil

LUST:

Facility:

Name:	MOBIL SERVICE STATION

MOBIL SERVICE STATION NO 11636 (Continued) **S106513357**

Address:	156 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Current Status:	**Response Action Outcome**
Release Tracking Number/Current Status:	4-0000862 / RAO
Status Date:	12/29/1994
Source Type:	UST
Release Town:	BARNSTABLE
Notification Date:	01/15/1990
Category:	NONE
Associated ID:	Not reported
Phase:	Not reported
Response Action Outcome:	A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil Or Haz Material:	Oil
Location Type:	GASSTATION
Location Type:	COMMERCIAL
Source:	UST

Click here to access the MA DEP site for this facility:

Chemicals:

Chemical:	PETROLEUM
Quantity:	Not reported

Actions:

Action Type:	Release Disposition
Action Status:	Valid Transition Site
Action Date:	1/15/1990
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Tier Classification
Action Status:	Tier 1A Classification
Action Date:	10/7/1994
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Tier Classification
Action Status:	Permit Effective Date
Action Date:	10/7/1994
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Tier Classification
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	10/7/1994
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	12/29/1994
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

MOBIL SERVICE STATION NO 11636 (Continued) **S106513357**

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 5/25/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 5/25/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Tier 1A or Priority Submittal Approved
Action Date: 7/6/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Facility:
Name: MOBIL GAS STA FMR
Address: 156 IYANOUGH RD
City,State,Zip: HYANNIS, MA 026010000
Current Status: **Response Action Outcome**
Release Tracking Number/Current Status: 4-0019209 / RAO
Status Date: 01/23/2006
Source Type: UST
Release Town: BARNSTABLE
Notification Date: 07/11/2005
Category: TWO HR
Associated ID: Not reported
Phase: Not reported
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil Or Haz Material: Oil

Location Type: COMMERCIAL
Source: UST

Click here to access the MA DEP site for this facility:

Chemicals:
Chemical: OIL
Quantity: 100 gallons

Actions:
Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 1/23/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Fee Received - FMCRA Use Only
Action Date: 1/23/2006

MOBIL SERVICE STATION NO 11636 (Continued) **S106513357**

Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 2/16/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 7/11/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 7/11/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 7/11/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 7/14/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 9/9/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 9/9/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Release:
Name: MOBIL SERVICE STATION
Address: 156 IYANOUGH RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0000862 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 01/15/1990
Category: NONE
Status Date: 12/29/1994
Phase: Not reported

MOBIL SERVICE STATION NO 11636 (Continued) **S106513357**

Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 1/15/1990
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 10/7/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 10/7/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 10/7/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 12/29/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 5/25/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 5/25/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Tier 1A or Priority Submittal Approved
Action Date: 7/6/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:

MOBIL SERVICE STATION NO 11636 (Continued) **S106513357**

Chemical:	PETROLEUM
Quantity:	Not reported
Location Type:	GASSTATION
Location Type:	COMMERCIAL
Source:	UST
Name:	BARNSTABLE MOBIL STATION
Address:	156 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0013422 / RAO
Primary ID:	4-0013422
Official City:	BARNSTABLE
Notification:	10/09/1997
Category:	72 HR
Status Date:	01/23/2006
Phase:	Not reported
Response Action Outcome:	A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type:	Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Release Abatement Measure
Action Status:	Completion Statement Received
Action Date:	1/19/2005
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Immediate Response Action
Action Status:	Imminent Hazard Evaluation Received
Action Date:	1/21/1998
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	1/23/2006
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Immediate Response Action
Action Status:	Status or Interim Report Received
Action Date:	10/11/2001
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Immediate Response Action
Action Status:	Status or Interim Report Received
Action Date:	10/15/1999
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Immediate Response Action
Action Status:	Status or Interim Report Received
Action Date:	10/16/1998
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been

MOBIL SERVICE STATION NO 11636 (Continued) **S106513357**

reduced to background.

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 10/16/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 1
Action Status: Completion Statement Received
Action Date: 10/16/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Tier 1C Classification
Action Date: 10/16/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 10/16/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 10/24/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 10/24/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 10/29/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 10/9/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 11/10/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action

MOBIL SERVICE STATION NO 11636 (Continued) **S106513357**

Action Status: Written Plan Received
Action Date: 11/21/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 11/21/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 11/4/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 11/5/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Modified Revised or Updated Plan Received
Action Date: 12/13/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Imminent Hazard Evaluation Received
Action Date: 12/13/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 2/16/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 3/25/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Written Plan Received
Action Date: 3/26/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 4
Action Status: Completion Statement Received
Action Date: 3/4/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been

MOBIL SERVICE STATION NO 11636 (Continued) **S106513357**

reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 3/4/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 3/6/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 3/7/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 3/7/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 4/12/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Level I - Technical Screen Audit
Action Date: 4/12/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 4/18/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Modified Revised or Updated Plan Received
Action Date: 4/18/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 2
Action Status: Scope of Work Received
Action Date: 4/3/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action

MOBIL SERVICE STATION NO 11636 (Continued) **S106513357**

Action Status: Completion Statement Received
Action Date: 4/3/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Imminent Hazard Evaluation Received
Action Date: 4/9/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 4/9/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Status or Interim Report Received
Action Date: 4/9/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 5/23/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 6/1/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via Tier Classification Submittal
Action Date: 6/1/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 4
Action Status: Written Plan Received
Action Date: 6/20/2002
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 8/20/2004
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure
Action Status: Completion Statement Received
Action Date: 9/15/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been

MOBIL SERVICE STATION NO 11636 (Continued) **S106513357**

reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 9/2/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: BWS03
Action Status: APPROV
Action Date: Not reported
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: GASOLINE
Quantity: Not reported
Location Type: COMMERCIAL
Source: PIPE

Name: AIRPORT MOBIL
Address: 156 IYANOUGH RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0015997 / RAONR
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 01/23/2001
Category: TWO HR
Status Date: 06/01/2001
Phase: Not reported
Response Action Outcome: -
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 1/23/2001
Response Action Outcome: Not reported

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 1/23/2001
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 10/16/1998
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Tier 1C Classification
Action Date: 10/16/1998
Response Action Outcome: Not reported

MOBIL SERVICE STATION NO 11636 (Continued) **S106513357**

Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	2/21/2001
Response Action Outcome:	Not reported
Action Type:	RNF
Action Status:	Reportable Release under MGL 21E
Action Date:	3/26/2001
Response Action Outcome:	Not reported
Action Type:	Immediate Response Action
Action Status:	Written Plan Received
Action Date:	3/26/2001
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Permit Effective Date
Action Date:	3/6/2000
Response Action Outcome:	Not reported
Action Type:	RAO Not Required
Action Status:	Linked to a Tier Classified Site
Action Date:	6/1/2001
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	RTN Linked to TCLASS Via Tier Classification Submittal
Action Date:	6/1/2001
Response Action Outcome:	Not reported
Action Type:	Immediate Response Action
Action Status:	Completion Statement Received
Action Date:	6/1/2001
Response Action Outcome:	Not reported

Chemicals:

Chemical:	GASOLINE
Quantity:	20 gallons
Location Type:	COMMERCIAL
Source:	VEHICLE
Name:	MOBIL SERVICE STATION NO 11636
Address:	156 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0018891 / RAO
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	01/21/2005
Category:	120 DY
Status Date:	01/23/2006
Phase:	Not reported
Response Action Outcome:	A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type:	Oil

MOBIL SERVICE STATION NO 11636 (Continued) **S106513357**

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	1/21/2005
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	RNF
Action Status:	Reportable Release under MGL 21E
Action Date:	1/21/2005
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	1/23/2006
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Response Action Outcome - RAO
Action Status:	Fee Received - FMCRA Use Only
Action Date:	1/23/2006
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	2/16/2006
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Release Abatement Measure
Action Status:	Written Plan Received
Action Date:	5/23/2005
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Release Abatement Measure
Action Status:	Fee Received - FMCRA Use Only
Action Date:	5/25/2005
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	6/23/2005
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Release Abatement Measure
Action Status:	Completion Statement Received
Action Date:	9/15/2005
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

MOBIL SERVICE STATION NO 11636 (Continued) **S106513357**

Chemicals:

Chemical:	C11 THRU C22 AROMATIC HYDROCARBONS
Quantity:	569 parts per million
Chemical:	C19 THRU C36 ALIPHATIC HYDROCARBONS
Quantity:	15400 parts per million

Name:	MOBIL GAS STA FMR
Address:	156 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0019209 / RAO
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	07/11/2005
Category:	TWO HR
Status Date:	01/23/2006
Phase:	Not reported
Response Action Outcome:	A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type:	Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	1/23/2006
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Response Action Outcome - RAO
Action Status:	Fee Received - FMCRA Use Only
Action Date:	1/23/2006
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	2/16/2006
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	RLFA
Action Status:	FOLOFF
Action Date:	7/11/2005
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Immediate Response Action
Action Status:	Oral Approval of Plan or Action
Action Date:	7/11/2005
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	7/11/2005

MOBIL SERVICE STATION NO 11636 (Continued) **S106513357**

Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 7/14/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 9/9/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 9/9/2005
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: OIL
Quantity: 100 gallons
Location Type: COMMERCIAL
Source: UST

J72 **ROBERTS AUTO WHOLESALE** **MA SHWS** **S111739449**
SSE **202 YARMOUTH RD** **MA RELEASE** **N/A**
1/2-1 **HYANNIS, MA 02601** **MA HW GEN**
0.753 mi.
3978 ft. **Site 3 of 3 in cluster J**

Relative:
Lower

Actual:
32 ft.

SHWS:
Name: ROBERTS AUTO WHOLESALE
Address: 202 YARMOUTH RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0013202
Source Type: UNKNOWN
Release Town: BARNSTABLE
Notification Date: 07/18/1997
Category: 120 DY
Associated ID: Not reported
Current Status: DPS
Status Date: 08/07/1998
Phase: Not reported
Response Action Outcome: Not reported
Oil Or Haz Material: Oil and Hazardous Material

Release:
Name: ROBERTS AUTO WHOLESALE
Address: 202 YARMOUTH RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0013202 / DPS
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 07/18/1997

ROBERTS AUTO WHOLESALE (Continued) **S111739449**

Category: 120 DY
Status Date: 08/07/1998
Phase: Not reported
Response Action Outcome: -
Oil / Haz Material Type: Oil and Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Downgradient Property Status
Action Status: Level I - Technical Screen Audit
Action Date: 2/6/2006
Response Action Outcome: Not reported

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 7/18/1997
Response Action Outcome: Not reported

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 8/7/1997
Response Action Outcome: Not reported

Action Type: Downgradient Property Status
Action Status: Transmittal, Notice, or Notification Received
Action Date: 8/7/1998
Response Action Outcome: Not reported

Chemicals:
Chemical: NAPTHALENE, BETA-CHLORO
Quantity: 67 parts per billion
Chemical: TPH
Quantity: 205 parts per million
Location Type: COMMERCIAL
Source: UNKNOWN

HW GEN:
Name: THE CAR GUYS
Address: 202 YARMOUTH RD
City,State,Zip: HYANNIS, MA 02601
EPA Id: MV5087752300
RCRA Generator Status: Not reported
State Generator Status: SQG-MA

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73 **COMMERCIAL PROPERTY** **MA SHWS** **S127590342**
WNW **95 AIRPORT ROAD** **MA RELEASE** **N/A**
1/2-1 **HYANNIS, MA 02601**
0.763 mi.
4027 ft.

Relative:
Higher

Actual:
52 ft.

SHWS:
Name: COMMERCIAL PROPERTY
Address: 95 AIRPORT ROAD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0028856

COMMERCIAL PROPERTY (Continued) **S127590342**

Source Type:	UNKNOWN
Release Town:	BARNSTABLE
Notification Date:	06/23/2021
Category:	120 DY
Associated ID:	Not reported
Current Status:	DPS
Status Date:	08/06/2021
Phase:	Not reported
Response Action Outcome:	Not reported
Oil Or Haz Material:	Not reported

Release:

Name:	COMMERCIAL PROPERTY
Address:	95 AIRPORT ROAD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0028856 / DPS
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	06/23/2021
Category:	120 DY
Status Date:	08/06/2021
Phase:	Not reported
Response Action Outcome:	-
Oil / Haz Material Type:	Not reported

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	RLFA
Action Status:	FLDRUN
Action Date:	3/16/2022
Response Action Outcome:	Not reported
Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	6/23/2021
Response Action Outcome:	Not reported
Action Type:	RNFE
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	6/23/2021
Response Action Outcome:	Not reported
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	7/8/2021
Response Action Outcome:	Not reported
Action Type:	Downgradient Property Status
Action Status:	Fee Received - FMCRA Use Only
Action Date:	8/12/2021
Response Action Outcome:	Not reported
Action Type:	Downgradient Property Status
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	8/6/2021

COMMERCIAL PROPERTY (Continued) **S127590342**

Response Action Outcome: Not reported

Action Type: RLFA
Action Status: FLDRUN
Action Date: 9/10/2021
Response Action Outcome: Not reported

Action Type: Downgradient Property Status
Action Status: Level I - Technical Screen Audit
Action Date: 9/15/2021
Response Action Outcome: Not reported

Chemicals:
Chemical: Not reported
Quantity: Not reported
Location Type: COMMERCIAL
Source: UNKNOWN

74
SSE
1/2-1
0.763 mi.
4028 ft.

MOBIL SERV STA
156 IYANOUGH RD
BARNSTABLE, MA 02630

MA SHWS **S101026778**
MA RELEASE **N/A**
MA SPILLS
MA HW GEN

Relative:
Lower

Actual:
30 ft.

SHWS:
Name: MOBIL SER STN #01-QJH
Address: 156 IYANOUGH RD
City,State,Zip: BARNSTABLE, MA 026300000
Facility ID: 4-0011972
Source Type: DRYWELL
Release Town: BARNSTABLE
Notification Date: 03/16/1996
Category: 120 DY
Associated ID: Not reported
Current Status: RAO
Status Date: 07/01/1996
Phase: Not reported
Response Action Outcome: A2
Oil Or Haz Material: Oil

Release:
Name: MOBIL SER STN #01-QJH
Address: 156 IYANOUGH RD
City,State,Zip: BARNSTABLE, MA 026300000
Release Tracking Number/Current Status: 4-0011972 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 03/16/1996
Category: 120 DY
Status Date: 07/01/1996
Phase: Not reported
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type: Oil

MOBIL SERV STA (Continued) **S101026778**

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	3/16/1996
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	3/5/1996
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	RNF
Action Status:	Reportable Release under MGL 21E
Action Date:	5/2/1996
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	7/1/1996
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type:	RNF
Action Status:	Reportable Release under MGL 21E
Action Date:	7/1/1996
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:

Chemical:	TPH
Quantity:	8160 parts per million
Location Type:	COMMERCIAL
Source:	DRYWELL

MA Spills:

Facility ID:	4-0862	Spill ID:	S89-0812
Staff Lead:	OTHER	Date Entered:	19931209
Last Entered:	19931209	First Response:	19891120
Spill Date:	Not reported	Spill Time:	Not reported
Report Date:	19891116	Report Time:	04:15PM
Case Closed:	YES	Mat Type:	PETROLEUM
Virgin Waste:	------	Contam Soil:	Not reported
Env Impact:	Not reported	Other Impact:	Not reported
Material:	GASOLINE	Other Material:	Not reported
Qty Reported:	UNKNOWN	Qty Actual:	UNKNOWN
Qty Reported:	GALLONS	Qty Actual:	GALLONS
CAS No:	Not reported	PCB Lev (ppm):	----------
Source:	U.S.T.	Other Source:	Not reported
Incident:	LEAK	Other Incdnt:	Not reported
Cleanup Type:	---	Contractor:	NOT USED
Referral:	SA	LUST Elig:	---

MOBIL SERV STA (Continued) **S101026778**

Report Prep:	Not reported	Category:	Not reported
Notifier:	JOAN LUCIA/ENGR CLERK		
Notif Tel:	Not reported		
Days/Close:	0		
Facility ID:	4-0862	Spill ID:	S91-0200
Staff Lead:	KEARNS, R	Date Entered:	19920227
Last Entered:	19920227	First Response:	19910416
Spill Date:	19910416	Spill Time:	01:00AM
Report Date:	19910416	Report Time:	01:45AM
Case Closed:	YES	Mat Type:	NEITHER
Virgin Waste:	------	Contam Soil:	Not reported
Env Impact:	Not reported	Other Impact:	Not reported
Material:	OTHER MATERIAL -->	Other Material:	EFFLUENT WATER
Qty Reported:	UNKNOWN	Qty Actual:	UNKNOWN
Qty Reported:	----------	Qty Actual:	----------
CAS No:	Not reported	PCB Lev (ppm):	----------
Source:	OTHER SOURCE >	Other Source:	GW REC SYS
Incident:	OTHER RELEASE >	Other Incdnt:	LEACHING
Cleanup Type:	---	Contractor:	NOT USED
Referral:	SA	LUST Elig:	NO
Report Prep:	Not reported	Category:	Not reported
Notifier:	CAPT GRANT/FD		
Notif Tel:	Not reported		
Days/Close:	1		

HW GEN:

Name:	EXXONMOBIL OIL CORP
Address:	156 IYANOUGH RD
City,State,Zip:	BARNSTABLE, MA 02630
EPA Id:	MAD985295542
RCRA Generator Status:	VSQG
State Generator Status:	VQG-MA

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75 **NO LOCATION AID** **MA SHWS** **S121826626**
SSE **381 CAMP ST** **MA RELEASE** **N/A**
1/2-1 **HYANNIS, MA 02601**
0.764 mi.
4033 ft.

Relative:
Lower

Actual:
32 ft.

SHWS:

Name:	NO LOCATION AID
Address:	381 CAMP ST
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0014213
Source Type:	Not reported
Release Town:	BARNSTABLE
Notification Date:	09/25/1998
Category:	120 DY
Associated ID:	Not reported
Current Status:	RAONR
Status Date:	10/01/1999
Phase:	Not reported
Response Action Outcome:	Not reported
Oil Or Haz Material:	Hazardous Material

NO LOCATION AID (Continued) **S121826626**

Release:

Name:	NO LOCATION AID
Address:	381 CAMP ST
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0014213 / RAONR
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	09/25/1998
Category:	120 DY
Status Date:	10/01/1999
Phase:	Not reported
Response Action Outcome:	-
Oil / Haz Material Type:	Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	RAO Not Required
Action Status:	Linked to a Tier Classified Site
Action Date:	10/1/1999
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	RTN Linked to TCLASS Via Tier Classification Submittal
Action Date:	10/1/1999
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Tier 2 Transfer
Action Date:	10/2/1998
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	RTN Linked to TCLASS Via IRA Completion Statement
Action Date:	2/17/2004
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Tier 1C Classification
Action Date:	3/24/1999
Response Action Outcome:	Not reported
Action Type:	Tier Classification
Action Status:	Revised Statement or Transmittal Received
Action Date:	3/24/1999
Response Action Outcome:	Not reported
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	4/20/1999
Response Action Outcome:	Not reported
Action Type:	RLFA
Action Status:	FLDRAN
Action Date:	5/13/2010
Response Action Outcome:	Not reported

NO LOCATION AID (Continued) **S121826626**

Action Type: Tier Classification
Action Status: Permit Extension Received
Action Date: 6/14/2004
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Legal Notice Published
Action Date: 6/29/2006
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 7/24/2006
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 7/25/1999
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Tier 2 Classification
Action Date: 7/26/1995
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 7/26/1995
Response Action Outcome: Not reported

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 9/25/1998
Response Action Outcome: Not reported

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 9/25/1998
Response Action Outcome: Not reported

Chemicals:
Chemical: BENZ[E]ACEPHENANTHRYLENE
Quantity: 2.18 parts per million

76
SW
1/2-1
0.782 mi.
4129 ft.

NO LOCATION AID
252 HINCKLEY RD
HYANNIS, MA 02601

MA SHWS **S106513361**
MA RELEASE **N/A**

Relative: Higher

Actual: 43 ft.

SHWS:
Name: NO LOCATION AID
Address: 252 HINCKLEY RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0016090
Source Type: Not reported
Release Town: BARNSTABLE

NO LOCATION AID (Continued) **S106513361**

Notification Date: 02/23/2001
Category: 120 DY
Associated ID: Not reported
Current Status: RAO
Status Date: 12/20/2001
Phase: Not reported
Response Action Outcome: A2
Oil Or Haz Material: Oil

Release:
Name: NO LOCATION AID
Address: 252 HINCKLEY RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0016090 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 02/23/2001
Category: 120 DY
Status Date: 12/20/2001
Phase: Not reported
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 12/20/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Fee Received - FMCRA Use Only
Action Date: 12/21/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure
Action Status: Fee Received - FMCRA Use Only
Action Date: 2/22/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 2/23/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 2/23/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

NO LOCATION AID (Continued) **S106513361**

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 2/23/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure
Action Status: Completion Statement Received
Action Date: 6/28/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 6/28/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 6/4/2004
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: FUEL OIL
Quantity: 6000 parts per million

K77 **PACKAGING INDUSTRIES PLANT #1** **MA SHWS S111739447**
West **70 AIRPORT RD** **MA RELEASE N/A**
1/2-1 **HYANNIS, MA 02601**
0.795 mi.
4197 ft. **Site 1 of 2 in cluster K**

Relative:
Higher

Actual:
47 ft.

SHWS:
Name: PACKAGING INDUSTRIES PLANT #1
Address: 70 AIRPORT RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0011988
Source Type: UNKNOWN
Release Town: BARNSTABLE
Notification Date: 03/16/1996
Category: 120 DY
Associated ID: Not reported
Current Status: RAO
Status Date: 07/31/1998
Phase: Not reported
Response Action Outcome: B1
Oil Or Haz Material: Hazardous Material

Release:
Name: PACKAGING INDUSTRIES PLANT #1
Address: 70 AIRPORT RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0011988 / RAO
Primary ID: Not reported
Official City: BARNSTABLE

PACKAGING INDUSTRIES PLANT #1 (Continued) **S111739447**

Notification: 03/16/1996
Category: 120 DY
Status Date: 07/31/1998
Phase: Not reported
Response Action Outcome: B1 - Remedial actions have not been conducted because a level of No Significant Risk exists.
Oil / Haz Material Type: Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 3/16/1996
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 3/19/1996
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: Downgradient Property Status
Action Status: Action Status or AUL Terminated
Action Date: 3/19/1996
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 7/31/1998
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: Downgradient Property Status
Action Status: Action Status or AUL Terminated
Action Date: 7/31/1998
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Chemicals:

Chemical: TETRACHLOROETHENE
Quantity: 9.4 micrograms per liter
Location Type: INDUSTRIAL
Location Type: COMMERCIAL
Source: UNKNOWN

K78 **PACKAGING INDUSTRIAL GROUP FMR** **MA SHWS** **S106513068**
West **70-84 AIRPORT RD PLANTS 1 2 3** **MA RELEASE** **N/A**
1/2-1 **HYANNIS, MA 02601**
0.795 mi.
4197 ft. **Site 2 of 2 in cluster K**

Relative:
Higher

Actual:
47 ft.

SHWS:

Name:	PACKAGING INDUSTRIAL GROUP FMR
Address:	70-84 AIRPORT RD PLANTS 1 2 3
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0001080
Source Type:	UNKNOWN
Release Town:	BARNSTABLE
Notification Date:	07/15/1991
Category:	NONE
Associated ID:	Not reported
Current Status:	RAO
Status Date:	08/13/2001
Phase:	Not reported
Response Action Outcome:	A2
Oil Or Haz Material:	Oil and Hazardous Material

Release:

Name:	PACKAGING INDUSTRIAL GROUP FMR
Address:	70-84 AIRPORT RD PLANTS 1 2 3
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0001080 / RAO
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	07/15/1991
Category:	NONE
Status Date:	08/13/2001
Phase:	Not reported
Response Action Outcome:	A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type:	Oil and Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	An activity type that is related to an Audit
Action Status:	NAFNVD
Action Date:	12/19/1994
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Compliance and Enforcement Action
Action Status:	RFI
Action Date:	2/20/1997
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Partial RAO for this RTN
Action Status:	RAO Statement Received
Action Date:	2/9/1995
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

PACKAGING INDUSTRIAL GROUP FMR (Continued) **S106513068**

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 3/19/1996
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 2
Action Status: Tier 1A or Priority Submittal Approved
Action Date: 3/27/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 5/4/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 5/4/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: TREGS
Action Status: BWSC04
Action Date: 6/10/1996
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 6/10/1996
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 7/15/1991
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 7/18/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Compliance and Enforcement Action
Action Status: Interim Deadline Letter Issued
Action Date: 7/2/1996
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Compliance and Enforcement Action
Action Status: Notice of Enforcement Conference
Action Date: 7/29/1996

PACKAGING INDUSTRIAL GROUP FMR (Continued) **S106513068**

Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 8/13/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 8/13/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 8/28/1996
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 9/20/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 9/20/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: VOCS
Quantity: Not reported
Chemical: UNKNOWN CHEMICAL OF TYPE - HAZARDOUS MATERIAL
Quantity: Not reported
Location Type: INDUSTRIAL
Source: UNKNOWN

---

79 SSW 1/2-1 0.800 mi. 4224 ft. **HYANNIS USO #19-112** **FUDS 1024899848 N/A**

HYANNIS, MA

Relative: Lower
Actual: 39 ft.

FUDS:
EPA Region: 01
Installation ID: MA19799F186600
Congressional District Number: 9
Name: HYANNIS USO #19-112
FUDS Number: D01MA0235
City: HYANNIS
State: MA
County: BARNSTABLE
Object ID: 4981

HYANNIS USO #19-112 (Continued) **1024899848**

USACE Division:	NAD
USACE District:	New England District (NAE)
Status:	Properties without projects
Current Owner:	FED: FEDERAL FEDERAL WORKS AGENCY; USO SITE
EMS Map Link:	https://fudsportal.usace.army.mil/ems/inventory/map?id=59507
Eligibility:	Categorical Exclusion
Has Projects:	No
NPL Status:	Not reported
Project Required:	No
Feature Description:	The site D01MA0235 is a USO Site 19-112, located in Hyannis, Massachusetts. The Government acquired the site, consisting of 16.0 acres fee, by condemnation from the Town of Hyannis in October 1941. Accountability was assumed b~ Federal Works Agency (FWA) on 13 July 1943.
Latitude:	41.65861111
Longitude:	-70.285

---

80 WNW 1/2-1 0.805 mi. 4249 ft. **POLE 11/3** **MA SHWS S108859054**
ATTUCKS LN **MA RELEASE N/A**
HYANNIS, MA

Relative: Higher
Actual: 50 ft.

SHWS:

Name:	POLE 11/3
Address:	ATTUCKS LN
City,State,Zip:	HYANNIS, MA
Facility ID:	4-0020777
Source Type:	Not reported
Release Town:	BARNSTABLE
Notification Date:	09/12/2007
Category:	TWO HR
Associated ID:	Not reported
Current Status:	RAO
Status Date:	10/24/2007
Phase:	Not reported
Response Action Outcome:	A1
Oil Or Haz Material:	Not reported

Release:

Name:	POLE 11/3
Address:	ATTUCKS LN
City,State,Zip:	HYANNIS, MA
Release Tracking Number/Current Status:	4-0020777 / RAO
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	09/12/2007
Category:	TWO HR
Status Date:	10/24/2007
Phase:	Not reported
Response Action Outcome:	A1 - A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Oil / Haz Material Type:	Not reported

Click here to access the MA DEP site for this facility:

POLE 11/3 (Continued) **S108859054**

Actions:

Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	10/24/2007
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	11/9/2007
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	Immediate Response Action
Action Status:	Oral Approval of Plan or Action
Action Date:	9/12/2007
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	9/12/2007
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	9/14/2007
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Action Type:	RLFA
Action Status:	FOLOFF
Action Date:	9/14/2007
Response Action Outcome:	A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Chemicals:

Chemical:	HYDRAULIC OIL
Quantity:	30 gallons
Location Type:	ROADWAY

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81 **UNDEVELOPED PROPERTY LOT 147** **MA SHWS S107517380**
SSE **114 IYANOUGH RD** **MA RELEASE N/A**
1/2-1 **HYANNIS, MA 02601**
0.819 mi.
4322 ft.

Relative: Lower

Actual: 29 ft.

SHWS:

Name:	UNDEVELOPED PROPERTY LOT 147
Address:	114 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0019452
Source Type:	Not reported
Release Town:	BARNSTABLE
Notification Date:	11/01/2005
Category:	120 DY

UNDEVELOPED PROPERTY LOT 147 (Continued) **S107517380**

Associated ID:	Not reported
Current Status:	DPS
Status Date:	06/26/2006
Phase:	Not reported
Response Action Outcome:	Not reported
Oil Or Haz Material:	Oil and Hazardous Material

Release:

Name:	UNDEVELOPED PROPERTY LOT 147
Address:	114 IYANOUGH RD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0019452 / DPS
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	11/01/2005
Category:	120 DY
Status Date:	06/26/2006
Phase:	Not reported
Response Action Outcome:	-
Oil / Haz Material Type:	Oil and Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	1/10/2006
Response Action Outcome:	Not reported

Action Type:	RLFA
Action Status:	FOLOFF
Action Date:	1/30/2006
Response Action Outcome:	Not reported

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	11/1/2005
Response Action Outcome:	Not reported

Action Type:	RNF
Action Status:	Reportable Release under MGL 21E
Action Date:	11/1/2005
Response Action Outcome:	Not reported

Action Type:	Downgradient Property Status
Action Status:	Fee Received - FMCRA Use Only
Action Date:	6/15/2006
Response Action Outcome:	Not reported

Action Type:	Downgradient Property Status
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	6/26/2006
Response Action Outcome:	Not reported

Action Type:	Downgradient Property Status
Action Status:	Level I - Technical Screen Audit

UNDEVELOPED PROPERTY LOT 147 (Continued) **S107517380**

Action Date: 7/17/2006
Response Action Outcome: Not reported

Chemicals:
Chemical: C9 THRU C10 AROMATIC HYDROCARBONS
Quantity: 650 parts per billion
Chemical: NAPHTHALENE
Quantity: 22.1 parts per billion

---

82 South 1/2-1 0.845 mi. 4462 ft.

GARAGE
82 RIDGEWOOD AVE
BARNSTABLE, MA 02630

MA SHWS S103812560
MA RELEASE N/A

Relative: Lower

Actual: 32 ft.

SHWS:
Name: GARAGE
Address: 82 RIDGEWOOD AVE
City,State,Zip: BARNSTABLE, MA 026300000
Facility ID: 4-0014264
Source Type: PIPE
Release Town: BARNSTABLE
Notification Date: 10/19/1998
Category: TWO HR
Associated ID: Not reported
Current Status: DEPNFA
Status Date: 08/26/2008
Phase: Not reported
Response Action Outcome: Not reported
Oil Or Haz Material: Not reported

Release:
Name: GARAGE
Address: 82 RIDGEWOOD AVE
City,State,Zip: BARNSTABLE, MA 026300000
Release Tracking Number/Current Status: 4-0014264 / DEPNFA
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 10/19/1998
Category: TWO HR
Status Date: 08/26/2008
Phase: Not reported
Response Action Outcome: -
Oil / Haz Material Type: Not reported

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Release Disposition
Action Status: Release Notification Retraction
Action Date: 10/12/1999
Response Action Outcome: Not reported

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 10/13/1999

GARAGE (Continued) **S103812560**

Response Action Outcome: Not reported

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 10/19/1998
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 10/20/1998
Response Action Outcome: Not reported

Action Type: RLFA
Action Status: FOLOFF
Action Date: 10/20/1998
Response Action Outcome: Not reported

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 10/27/1998
Response Action Outcome: Not reported

Action Type: RLFA
Action Status: FOLOFF
Action Date: 3/14/2000
Response Action Outcome: Not reported

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 4/23/2007
Response Action Outcome: Not reported

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 6/15/2007
Response Action Outcome: Not reported

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 6/2/2000
Response Action Outcome: Not reported

Action Type: RAO Not Required
Action Status: DEPNFA
Action Date: 8/26/2008
Response Action Outcome: Not reported

Chemicals:
Chemical: HYDRAULIC OIL
Quantity: 45 gallons
Location Type: COMMERCIAL
Source: PIPE

83
West
1/2-1
0.859 mi.
4538 ft.

SEARS AUTOMOTIVE CENTER
CPE COD MALL RTE 132
HYANNIS, MA 02601

MA SHWS **S106508881**
MA LUST **N/A**
MA RELEASE

Relative:
Higher

Actual:
45 ft.

SHWS:

Name:	SEARS AUTOMOTIVE CENTER
Address:	CPE COD MALL RTE 132
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0000899
Source Type:	OILWATSEP
Release Town:	BARNSTABLE
Notification Date:	07/15/1990
Category:	NONE
Associated ID:	Not reported
Current Status:	PSNC
Status Date:	01/08/2021
Phase:	Not reported
Response Action Outcome:	PN
Oil Or Haz Material:	Oil and Hazardous Material

Name:	SEARS AUTOMOTIVE CENTER
Address:	CPE COD MALL RTE 132
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0000899
Source Type:	TANK
Release Town:	BARNSTABLE
Notification Date:	07/15/1990
Category:	NONE
Associated ID:	Not reported
Current Status:	PSNC
Status Date:	01/08/2021
Phase:	Not reported
Response Action Outcome:	PN
Oil Or Haz Material:	Oil and Hazardous Material

LUST:

Facility:

Name:	SEARS AUTOMOTIVE CENTER
Address:	CPE COD MALL RTE 132
City,State,Zip:	HYANNIS, MA 026010000
Current Status:	**Permanent Solution with No Conditions**
Release Tracking Number/Current Status:	4-0000899 / PSNC
Status Date:	01/08/2021
Source Type:	UST
Release Town:	BARNSTABLE
Notification Date:	07/15/1990
Category:	NONE
Associated ID:	Not reported
Phase:	Not reported
Response Action Outcome:	PN - PN
Oil Or Haz Material:	Oil and Hazardous Material

Location Type:	AUTOREPAIR
Location Type:	COMMERCIAL
Source:	UST
Source:	TANK

SEARS AUTOMOTIVE CENTER (Continued) **S106508881**

Source: OILWATSEP

Click here to access the MA DEP site for this facility:

Chemicals:
Chemical: VOCS
Quantity: Not reported
Chemical: PETROLEUM
Quantity: Not reported
Chemical: METALS
Quantity: Not reported

Actions:
Action Type: Response Action Outcome - RAO
Action Status: PSNRCD
Action Date: 1/8/2021
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 5/25/2021
Response Action Outcome: PN

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 5/5/1997
Response Action Outcome: PN

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 7/15/1990
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 7/31/1997
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 9/14/1994
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: Tier 1B Classification
Action Date: 9/14/1994
Response Action Outcome: PN

Action Type: TREGS
Action Status: BWSC05
Action Date: 9/14/1994
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received

SEARS AUTOMOTIVE CENTER (Continued) **S106508881**

Action Date: 9/14/1994
Response Action Outcome: PN

Release:
Name: SEARS AUTOMOTIVE CENTER
Address: CPE COD MALL RTE 132
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0000899 / PSNC
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 07/15/1990
Category: NONE
Status Date: 01/08/2021
Phase: Not reported
Response Action Outcome: PN - PN
Oil / Haz Material Type: Oil and Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:
Action Type: Response Action Outcome - RAO
Action Status: PSNRCD
Action Date: 1/8/2021
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 5/25/2021
Response Action Outcome: PN

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 5/5/1997
Response Action Outcome: PN

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 7/15/1990
Response Action Outcome: PN

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 7/31/1997
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 9/14/1994
Response Action Outcome: PN

Action Type: Tier Classification
Action Status: Tier 1B Classification
Action Date: 9/14/1994
Response Action Outcome: PN

SEARS AUTOMOTIVE CENTER (Continued) **S106508881**

Action Type:	TREGS
Action Status:	BWSC05
Action Date:	9/14/1994
Response Action Outcome:	PN
Action Type:	Tier Classification
Action Status:	Transmittal, Notice, or Notification Received
Action Date:	9/14/1994
Response Action Outcome:	PN

Chemicals:

Chemical:	VOCS
Quantity:	Not reported
Chemical:	PETROLEUM
Quantity:	Not reported
Chemical:	METALS
Quantity:	Not reported
Location Type:	AUTOREPAIR
Location Type:	COMMERCIAL
Source:	UST
Source:	TANK
Source:	OILWATSEP

84
ENE
1/2-1
0.868 mi.
4582 ft.

FMR WILLOW ST SHELL-BRAND SERV STATION **MA SHWS** **S121826619**
381 CAMP ST **MA RELEASE** **N/A**
WEST YARMOUTH, MA 02673 **MA UIC**

Relative:
Lower

Actual:
33 ft.

SHWS:

Name:	FMR WILLOW ST SHELL-BRAND SERV STATION
Address:	381 CAMP ST
City,State,Zip:	WEST YARMOUTH, MA 026730000
Facility ID:	4-0001179
Source Type:	Not reported
Release Town:	YARMOUTH
Notification Date:	07/15/1992
Category:	NONE
Associated ID:	4-0001179
Current Status:	REMOPS
Status Date:	01/31/2007
Phase:	PHASE V
Response Action Outcome:	Not reported
Oil Or Haz Material:	Oil

Release:

Name:	FMR WILLOW ST SHELL-BRAND SERV STATION
Address:	381 CAMP ST
City,State,Zip:	WEST YARMOUTH, MA 026730000
Release Tracking Number/Current Status:	4-0001179 / REMOPS
Primary ID:	4-0001179
Official City:	YARMOUTH
Notification:	07/15/1992
Category:	NONE
Status Date:	01/31/2007
Phase:	PHASE V
Response Action Outcome:	-

FMR WILLOW ST SHELL-BRAND SERV STATION (Continued) **S121826619**

Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type: Response Action Outcome - RAO
Action Status: Inspection and Monitoring Report Received
Action Date: 1/13/2004
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 1/15/2002
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 1/21/2014
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 1/21/2014
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 1/22/2003
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 1/22/2016
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 1/22/2016
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 1/26/2011
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 1/26/2011
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 1/26/2012
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT

FMR WILLOW ST SHELL-BRAND SERV STATION (Continued) **S121826619**

Action Date: 1/26/2012
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 1/28/2009
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 1/28/2009
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 1/28/2009
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 1/29/2010
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 1/29/2010
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 1/29/2021
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 1/29/2021
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 1/30/2008
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 1/30/2008
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 1/30/2008
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 1/30/2015
Response Action Outcome: Not reported

FMR WILLOW ST SHELL-BRAND SERV STATION (Continued) **S121826619**

Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	1/30/2015
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	1/30/2018
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	1/30/2018
Response Action Outcome:	Not reported
Action Type:	Release Abatement Measure
Action Status:	Written Plan Received
Action Date:	1/31/1995
Response Action Outcome:	Not reported
Action Type:	TREGS
Action Status:	LSPFA
Action Date:	1/31/1995
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	Remedy Operation Status Submittal Received
Action Date:	1/31/2007
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	1/31/2007
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	1/31/2017
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	1/31/2017
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	1/31/2020
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	1/31/2020
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received

FMR WILLOW ST SHELL-BRAND SERV STATION (Continued) **S121826619**

Action Date: 1/31/2022
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 1/31/2022
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 1/31/2023
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 1/31/2023
Response Action Outcome: Not reported

Action Type: Phase 1
Action Status: Completion Statement Received
Action Date: 1/5/1995
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via Tier Classification Submittal
Action Date: 10/1/1999
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Tier 2 Transfer
Action Date: 10/2/1998
Response Action Outcome: Not reported

Action Type: An activity type that is related to an Audit
Action Status: Audit Follow-up Completion Statement Received
Action Date: 10/25/2002
Response Action Outcome: Not reported

Action Type: Phase 4
Action Status: Status or Interim Report Received
Action Date: 10/6/2006
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 10/6/2006
Response Action Outcome: Not reported

Action Type: Release Abatement Measure
Action Status: Completion Statement Received
Action Date: 11/18/2004
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINI
Action Date: 12/11/2006
Response Action Outcome: Not reported

FMR WILLOW ST SHELL-BRAND SERV STATION (Continued) **S121826619**

Action Type: Phase 4
Action Status: Completion Statement Received
Action Date: 12/11/2006
Response Action Outcome: Not reported

Action Type: Release Abatement Measure
Action Status: Status or Interim Report Received
Action Date: 12/30/2003
Response Action Outcome: Not reported

Action Type: Phase 3
Action Status: Revised Statement or Transmittal Received
Action Date: 12/30/2005
Response Action Outcome: Not reported

Action Type: Phase 4
Action Status: Completion Statement Received
Action Date: 12/4/2006
Response Action Outcome: Not reported

Action Type: Phase 4
Action Status: RMRINI
Action Date: 12/4/2006
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 2/1/2013
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 2/1/2013
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 2/1/2019
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 2/1/2019
Response Action Outcome: Not reported

Action Type: An activity type that is related to an Audit
Action Status: Notice of Non-compliance related to an Audit
Action Date: 2/16/1999
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: RTN Linked to TCLASS Via IRA Completion Statement
Action Date: 2/17/2004
Response Action Outcome: Not reported

Action Type: Response Action Outcome - RAO
Action Status: Submittal Retracted

FMR WILLOW ST SHELL-BRAND SERV STATION (Continued) **S121826619**

Action Date: 2/17/2004
Response Action Outcome: Not reported

Action Type: Release Abatement Measure
Action Status: Completion Statement Received
Action Date: 2/17/2004
Response Action Outcome: Not reported

Action Type: Release Abatement Measure
Action Status: Fee Received - FMCRA Use Only
Action Date: 2/6/1995
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Revised Statement or Transmittal Received
Action Date: 3/24/1999
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Tier 1C Classification
Action Date: 3/24/1999
Response Action Outcome: Not reported

Action Type: RLFA
Action Status: FLDRAN
Action Date: 3/29/2007
Response Action Outcome: Not reported

Action Type: Phase 4
Action Status: Written Plan Received
Action Date: 3/31/2006
Response Action Outcome: Not reported

Action Type: Phase 2
Action Status: Notice of Delay in Meeting RA Deadline Received
Action Date: 4/12/2001
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Submittal Received
Action Date: 5/1/2001
Response Action Outcome: Not reported

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 5/1/2001
Response Action Outcome: Not reported

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 5/1/2001
Response Action Outcome: Not reported

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 5/1/2001
Response Action Outcome: Not reported

FMR WILLOW ST SHELL-BRAND SERV STATION (Continued) **S121826619**

Action Type: Phase 5
Action Status: ROSTRN
Action Date: 5/15/2017
Response Action Outcome: Not reported

Action Type: Release Abatement Measure
Action Status: Completion Statement Received
Action Date: 5/22/1995
Response Action Outcome: Not reported

Action Type: RLFA
Action Status: FLDRUN
Action Date: 5/5/2011
Response Action Outcome: Not reported

Action Type: An activity type that is related to an Audit
Action Status: NAFNVD
Action Date: 5/7/2007
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Permit Extension Received
Action Date: 6/14/2004
Response Action Outcome: Not reported

Action Type: Compliance and Enforcement Action
Action Status: Interim Deadline Letter Issued
Action Date: 6/15/1994
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Legal Notice Published
Action Date: 6/29/2006
Response Action Outcome: Not reported

Action Type: An activity type that is related to an Audit
Action Status: NAFNVD
Action Date: 6/8/2011
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Level II - Audit Inspection
Action Date: 6/8/2011
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 7/10/2009
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 7/10/2009
Response Action Outcome: Not reported

Action Type: Release Disposition
Action Status: Valid Transition Site

FMR WILLOW ST SHELL-BRAND SERV STATION (Continued) **S121826619**

Action Date: 7/15/1992
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 7/15/2003
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Inspection and Monitoring Report Received
Action Date: 7/22/2002
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 7/24/2006
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 7/25/1999
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 7/25/2008
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Status or Interim Report Received
Action Date: 7/25/2008
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 7/25/2008
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 7/26/1995
Response Action Outcome: Not reported

Action Type: Tier Classification
Action Status: Tier 2 Classification
Action Date: 7/26/1995
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 7/26/2011
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 7/26/2011
Response Action Outcome: Not reported

FMR WILLOW ST SHELL-BRAND SERV STATION (Continued) **S121826619**

Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	7/26/2013
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	7/26/2013
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	7/28/2014
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	7/28/2014
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	7/29/2016
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	7/29/2016
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	7/29/2022
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	7/29/2022
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	7/30/2015
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received
Action Date:	7/30/2015
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	RMRINT
Action Date:	7/30/2018
Response Action Outcome:	Not reported
Action Type:	Phase 5
Action Status:	Remedy Operation Status Report Received

FMR WILLOW ST SHELL-BRAND SERV STATION (Continued) **S121826619**

Action Date: 7/30/2018
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 7/30/2021
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 7/30/2021
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 7/31/2012
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 7/31/2012
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 7/31/2017
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 7/31/2017
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 7/31/2019
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 7/31/2019
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 7/31/2020
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 7/31/2020
Response Action Outcome: Not reported

Action Type: Phase 2
Action Status: Scope of Work Received
Action Date: 7/7/1997
Response Action Outcome: Not reported

FMR WILLOW ST SHELL-BRAND SERV STATION (Continued) **S121826619**

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 7/7/1997
Response Action Outcome: Not reported

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 8/12/2004
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Level I - Technical Screen Audit
Action Date: 8/14/2017
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 8/2/2007
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 8/2/2007
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: RMRINT
Action Date: 8/2/2010
Response Action Outcome: Not reported

Action Type: Phase 5
Action Status: Remedy Operation Status Report Received
Action Date: 8/2/2010
Response Action Outcome: Not reported

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 8/29/2003
Response Action Outcome: Not reported

Action Type: Release Abatement Measure
Action Status: Modified Revised or Updated Plan Received
Action Date: 9/21/2004
Response Action Outcome: Not reported

Action Type: RLFA
Action Status: FLDRUN
Action Date: 9/6/2007
Response Action Outcome: Not reported

Action Type: Phase 4
Action Status: Notice of Delay in Meeting RA Deadline Received
Action Date: 9/8/2006
Response Action Outcome: Not reported

Action Type: BWS20
Action Status: APPROV

FMR WILLOW ST SHELL-BRAND SERV STATION (Continued) **S121826619**

Action Date: Not reported
Response Action Outcome: Not reported

Action Type: BWS03
Action Status: APPROV
Action Date: Not reported
Response Action Outcome: Not reported

Chemicals:
Chemical: PETROLEUM
Quantity: Not reported

UIC:
RTN Number: 4-0001179
Name: EQUILON ENTERPRISES LLC D/B/A SHELL OIL PRODUCTS US
Address: 381 CAMP ST
City,State,Zip: WEST YARMOUTH, MA 026730000
Permit Date: 01/31/2020
Actor Name: Not reported
Air Sparging: Yes/Inactive
Injection Well: No
ReInjection Well: No
UIC APL Type: Not reported
Latitude: 41.67326189
Well Status: Not reported
Longitude: -70.26589982
UIC ID: Not reported
EPA Code: Not reported
Indicates Area: Not reported
Number of Wells: Not reported
Owner: Not reported
Receive Date: Not reported
Authorization to Install/Close Date: Not reported
Confirmation of Install Receive: Not reported
Post-Closure Receive: Not reported
Final Approval Date: Not reported
Permit Number: Not reported
Permit Type: Not reported
Permit Type Description: Not reported
Program: Not reported
Applicant Name: Not reported
Decision Date: Not reported
Operator Name: LISA STONE
Well ID: Not reported
Well Type Name: Not reported
Max Well Depth: Not reported
Date Complete: Not reported
Work Performed: Not reported
Depth to Bedrock: Not reported
Water Level: Not reported

L85 **CAPE COD MALL PARKING LOT** **MA SHWS** **S101020431**
West **RTE 132** **MA RELEASE** **N/A**
1/2-1 **HYANNIS, MA 02601** **MA SPILLS**
0.887 mi.
4684 ft. **Site 1 of 2 in cluster L**

Relative:
Higher

Actual:
41 ft.

SHWS:

Name:	POLE 150/86
Address:	RTE 132
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0014312
Source Type:	VEHICLE
Release Town:	BARNSTABLE
Notification Date:	11/06/1998
Category:	TWO HR
Associated ID:	Not reported
Current Status:	RAO
Status Date:	01/05/1999
Phase:	Not reported
Response Action Outcome:	A1
Oil Or Haz Material:	Not reported

Name:	CAPE COD MALL PARKING LOT
Address:	RTE 132
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0016505
Source Type:	VEHICLE
Release Town:	BARNSTABLE
Notification Date:	08/16/2001
Category:	TWO HR
Associated ID:	Not reported
Current Status:	RAO
Status Date:	11/20/2001
Phase:	Not reported
Response Action Outcome:	A2
Oil Or Haz Material:	Oil

Release:

Name:	POLE 150/86
Address:	RTE 132
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0014312 / RAO
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	11/06/1998
Category:	TWO HR
Status Date:	01/05/1999
Phase:	Not reported
Response Action Outcome:	A1 - A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.
Oil / Haz Material Type:	Not reported

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	1/5/1999

CAPE COD MALL PARKING LOT (Continued) **S101020431**

Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 11/12/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 11/6/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 11/6/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 11/6/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 12/15/2004
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 12/31/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated.

Chemicals:
Chemical: HYDRAULIC OIL
Quantity: 50 gallons
Location Type: ROADWAY
Source: VEHICLE

Name: CAPE COD MALL PARKING LOT
Address: RTE 132
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0016505 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 08/16/2001
Category: TWO HR
Status Date: 11/20/2001
Phase: Not reported
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.

CAPE COD MALL PARKING LOT (Continued) **S101020431**

Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 11/20/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 11/20/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 11/20/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 8/16/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 8/16/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 8/16/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 8/17/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 8/17/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 8/28/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been

CAPE COD MALL PARKING LOT (Continued) **S101020431**

reduced to background.

Chemicals:

Chemical:	DIESEL FUEL
Quantity:	100 gallons
Location Type:	COMMERCIAL
Source:	VEHICLE

MA Spills:

Facility ID:	0000	Spill ID:	S87-0472
Staff Lead:	BOLSTER, H	Date Entered:	19870922
Last Entered:	19870922	First Response:	19870729
Spill Date:	19870727	Spill Time:	10:00
Report Date:	19870728	Report Time:	03:00
Case Closed:	YES	Mat Type:	PETROLEUM
Virgin Waste:	WASTE	Contam Soil:	Not reported
Env Impact:	Not reported	Other Impact:	Not reported
Material:	TRANSFORMER OIL	Other Material:	Not reported
Qty Reported:	NONE	Qty Actual:	NONE
Qty Reported:	_____	Qty Actual:	_____
CAS No:	Not reported	PCB Lev (ppm):	Not reported
Source:	TRANSFORMER	Other Source:	Not reported
Incident:	Not reported	Other Incdnt:	Not reported
Cleanup Type:	Not reported	Contractor:	NOT USED
Referral:	NO	LUST Elig:	Not reported
Report Prep:	Not reported	Category:	Not reported
Notifier:	Not reported		
Notif Tel:	Not reported		
Days/Close:	1		

L86 **BEHIND SEARS** **MA SHWS** **S106513295**
West **RTE 132 CPE COD MALL** **MA RELEASE** **N/A**
1/2-1 **HYANNIS, MA 02601**
0.887 mi.
4684 ft. **Site 2 of 2 in cluster L**

Relative:
Higher

Actual:
41 ft.

SHWS:

Name:	BEHIND SEARS
Address:	RTE 132 CPE COD MALL
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0014747
Source Type:	TRANSFORM
Release Town:	BARNSTABLE
Notification Date:	05/25/1999
Category:	TWO HR
Associated ID:	Not reported
Current Status:	RAO
Status Date:	07/29/1999
Phase:	Not reported
Response Action Outcome:	A2
Oil Or Haz Material:	Oil

Release:

Name:	BEHIND SEARS
Address:	RTE 132 CPE COD MALL
City,State,Zip:	HYANNIS, MA 026010000

BEHIND SEARS (Continued) **S106513295**

Release Tracking Number/Current Status: 4-0014747 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 05/25/1999
Category: TWO HR
Status Date: 07/29/1999
Phase: Not reported
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type: Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type: RLFA
Action Status: FOLOFF
Action Date: 5/25/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 5/25/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 5/25/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 5/27/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 6/10/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 7/26/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 7/29/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

BEHIND SEARS (Continued) **S106513295**

Chemicals:
- Chemical: TRANSFORMER OIL
- Quantity: 200 gallons
- Location Type: COMMERCIAL
- Source: TRANSFORM

M87 **GETTY SERVICE STATION** **MA SHWS** **S106513255**
South **112 BARNSTABLE RD** **MA RELEASE** **N/A**
1/2-1 **HYANNIS, MA 02601** **MA HW GEN**
0.902 mi. **MA UIC**
4762 ft. **Site 1 of 2 in cluster M**

Relative: Lower
Actual: 34 ft.

SHWS:
- Name: GETTY SERVICE STATION
- Address: 112 BARNSTABLE RD
- City,State,Zip: HYANNIS, MA 026010000
- Facility ID: 4-0014059
- Source Type: Not reported
- Release Town: BARNSTABLE
- Notification Date: 07/09/1998
- Category: 120 DY
- Associated ID: Not reported
- Current Status: RAO
- Status Date: 07/09/1999
- Phase: Not reported
- Response Action Outcome: A2
- Oil Or Haz Material: Oil

- Name: GETTY SERVICE STA
- Address: 112 BARNSTABLE RD
- City,State,Zip: HYANNIS, MA 026010000
- Facility ID: 4-0014685
- Source Type: Not reported
- Release Town: BARNSTABLE
- Notification Date: 04/22/1999
- Category: 120 DY
- Associated ID: Not reported
- Current Status: RAO
- Status Date: 07/09/1999
- Phase: Not reported
- Response Action Outcome: A2
- Oil Or Haz Material: Hazardous Material

Release:
- Name: GETTY SERVICE STATION
- Address: 112 BARNSTABLE RD
- City,State,Zip: HYANNIS, MA 026010000
- Release Tracking Number/Current Status: 4-0014059 / RAO
- Primary ID: Not reported
- Official City: BARNSTABLE
- Notification: 07/09/1998
- Category: 120 DY
- Status Date: 07/09/1999
- Phase: Not reported
- Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
- Oil / Haz Material Type: Oil

GETTY SERVICE STATION (Continued) **S106513255**

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Release Abatement Measure
Action Status:	Status or Interim Report Received
Action Date:	1/27/1999
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	10/6/1998
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Release Abatement Measure
Action Status:	Written Approval of Plan
Action Date:	10/6/1998
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	3/16/2005
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Release Abatement Measure
Action Status:	Completion Statement Received
Action Date:	5/18/1999
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Response Action Outcome - RAO
Action Status:	Fee Received - FMCRA Use Only
Action Date:	7/13/1999
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	7/9/1998
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	RNF
Action Status:	Reportable Release under MGL 21E
Action Date:	7/9/1998
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	7/9/1999
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

GETTY SERVICE STATION (Continued) **S106513255**

Action Type: Release Abatement Measure
Action Status: Written Plan Received
Action Date: 8/6/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Abatement Measure
Action Status: Fee Received - FMCRA Use Only
Action Date: 8/7/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: C11 THRU C22 AROMATIC HYDROCARBONS
Quantity: 218 parts per million
Chemical: TPH
Quantity: 827 parts per million

Name: GETTY SERVICE STA
Address: 112 BARNSTABLE RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0014685 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 04/22/1999
Category: 120 DY
Status Date: 07/09/1999
Phase: Not reported
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type: Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:
Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 4/22/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 4/22/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 7/9/1999
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 8/3/1999

GETTY SERVICE STATION (Continued) **S106513255**

Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: SILVER
Quantity: 0.011 parts per million

HW GEN:
Name: EXCEL GAS AND REPAIR
Address: 112 BARNSTABLE RD
City,State,Zip: HYANNIS, MA 02601
EPA Id: MAR000614354
RCRA Generator Status: SQG
State Generator Status: Not reported

UIC:
RTN Number: Not reported
Name: GETTY SERVICE STATION
Address: 112 BARNSTABLE ROAD
City,State,Zip: HYANNIS, MA
Permit Date: Not reported
Actor Name: Not reported
Air Sparging: Not reported
Injection Well: Not reported
ReInjection Well: Not reported
UIC APL Type: WS-06d
Latitude: Not reported
Well Status: Not reported
Longitude: Not reported
UIC ID: Not reported
EPA Code: Not reported
Indicates Area: Not reported
Number of Wells: Not reported
Owner: Getty Realty? (Petroleum?) Corporation
Receive Date: Not reported
Authorization to Install/Close Date: Not reported
Confirmation of Install Receive: Not reported
Post-Closure Receive: Not reported
Final Approval Date: Not reported
Permit Number: Not reported
Permit Type: Not reported
Permit Type Description: Not reported
Program: Not reported
Applicant Name: Not reported
Decision Date: Not reported
Operator Name: Not reported
Well ID: Not reported
Well Type Name: Not reported
Max Well Depth: Not reported
Date Complete: Not reported
Work Performed: Not reported
Depth to Bedrock: Not reported
Water Level: Not reported

M88 **BENS AUTO REPAIR BDP** **MA SHWS** **S106513037**
South **5 CHARLES ST** **MA RELEASE** **N/A**
1/2-1 **HYANNIS, MA 02601**
0.912 mi.
4813 ft. **Site 2 of 2 in cluster M**

Relative:
Lower

Actual:
36 ft.

SHWS:

Name:	BENS AUTO REPAIR BDP
Address:	5 CHARLES ST
City,State,Zip:	HYANNIS, MA 02601
Facility ID:	4-0000383
Source Type:	Not reported
Release Town:	BARNSTABLE
Notification Date:	07/15/1987
Category:	NONE
Associated ID:	Not reported
Current Status:	DEPNFA
Status Date:	08/02/1995
Phase:	Not reported
Response Action Outcome:	Not reported
Oil Or Haz Material:	Not reported

Release:

Name:	BENS AUTO REPAIR BDP
Address:	5 CHARLES ST
City,State,Zip:	HYANNIS, MA 02601
Release Tracking Number/Current Status:	4-0000383 / DEPNFA
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	07/15/1987
Category:	NONE
Status Date:	08/02/1995
Phase:	Not reported
Response Action Outcome:	-
Oil / Haz Material Type:	Not reported

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Release Disposition
Action Status:	Valid Transition Site
Action Date:	7/15/1987
Response Action Outcome:	Not reported

Action Type:	TREGS
Action Status:	DEPNFA
Action Date:	8/2/1995
Response Action Outcome:	Not reported

Chemicals:

Chemical:	UNKNOWN
Quantity:	Not reported

89
South
1/2-1
0.930 mi.
4908 ft.

NO LOCATION AID
123 BARNSTABLE RD
HYANNIS, MA 02601

MA SHWS **S106513479**
MA RELEASE **N/A**
MA HW GEN

Relative:
Lower

Actual:
31 ft.

SHWS:

Name:	NO LOCATION AID
Address:	123 BARNSTABLE RD
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0018174
Source Type:	Not reported
Release Town:	BARNSTABLE
Notification Date:	12/17/2003
Category:	120 DY
Associated ID:	Not reported
Current Status:	RAO
Status Date:	12/17/2003
Phase:	Not reported
Response Action Outcome:	B1
Oil Or Haz Material:	Oil

Release:

Name:	NO LOCATION AID
Address:	123 BARNSTABLE RD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0018174 / RAO
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	12/17/2003
Category:	120 DY
Status Date:	12/17/2003
Phase:	Not reported
Response Action Outcome:	B1 - Remedial actions have not been conducted because a level of No Significant Risk exists.
Oil / Haz Material Type:	Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Response Action Outcome - RAO
Action Status:	Level I - Technical Screen Audit
Action Date:	10/22/2004
Response Action Outcome:	Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type:	RNF
Action Status:	Reportable Release under MGL 21E
Action Date:	12/17/2003
Response Action Outcome:	Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	12/17/2003
Response Action Outcome:	Remedial actions have not been conducted because a level of No Significant Risk exists.

NO LOCATION AID (Continued) **S106513479**

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 12/17/2003
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Chemicals:
Chemical: C11 THRU C22 AROMATIC HYDROCARBONS
Quantity: 203 parts per million

HW GEN:
Name: ROVER REPAIR CAPE COD LLC
Address: 123 BARNSTABLE RD
City,State,Zip: HYANNIS, MA 02601
EPA Id: MAR000577254
RCRA Generator Status: SQG
State Generator Status: Not reported

90
WSW
1/2-1
0.956 mi.
5047 ft.

CORPORATION PLAZA **MA SHWS** **S106488563**
109 CORPORATION RD **MA RELEASE** **N/A**
HYANNIS, MA 02601 **MA HW GEN**

Relative: Higher

Actual: 45 ft.

SHWS:
Name: CORPORATION PLAZA
Address: 109 CORPORATION RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0000890
Source Type: UNKNOWN
Release Town: BARNSTABLE
Notification Date: 04/15/1990
Category: NONE
Associated ID: Not reported
Current Status: RAO
Status Date: 07/07/2008
Phase: Not reported
Response Action Outcome: A2
Oil Or Haz Material: Oil

Release:
Name: CORPORATION PLAZA
Address: 109 CORPORATION RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0000890 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 04/15/1990
Category: NONE
Status Date: 07/07/2008
Phase: Not reported
Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type: Oil

CORPORATION PLAZA (Continued) **S106488563**

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Phase 2
Action Status:	Tier 1A or Priority Submittal Approved
Action Date:	1/25/2000
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Tier Classification
Action Status:	Permit Extension Received
Action Date:	1/26/2000
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	10/4/1990
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Phase 2
Action Status:	Scope of Work Received
Action Date:	11/24/1999
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Release Disposition
Action Status:	Valid Transition Site
Action Date:	4/15/1990
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Tier Classification
Action Status:	Tier 1A Classification
Action Date:	4/25/1994
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	5/11/1990
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Phase 2
Action Status:	Notice of Delay in Meeting RA Deadline Received
Action Date:	5/31/2000
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Partial RAO for this RTN
Action Status:	RAO Statement Received
Action Date:	6/14/1996
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.

CORPORATION PLAZA (Continued) **S106488563**

Action Type: Response Action Outcome - RAO
Action Status: Level I - Technical Screen Audit
Action Date: 7/25/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 7/7/2008
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 8/12/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: TREGS
Action Status: BWSC04
Action Date: 8/12/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Transmittal, Notice, or Notification Received
Action Date: 8/12/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 8/12/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Written Approval of Plan
Action Date: 8/15/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Compliance and Enforcement Action
Action Status: ACO
Action Date: 8/29/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 9/1/2000
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 9/1/2000

CORPORATION PLAZA (Continued) **S106488563**

Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: BWS20
Action Status: APPROV
Action Date: Not reported
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: VOCS
Quantity: Not reported
Location Type: COMMERCIAL
Source: UNKNOWN

HW GEN:
Name: MARVELOUS CLEANERS
Address: 109 CORPORATION RD
City,State,Zip: HYANNIS, MA 02601
EPA Id: MAD062165410
RCRA Generator Status: VSQG
State Generator Status: Not reported

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91 **THE IRON HOUSE** **MA SHWS S108117619**
WSW **95 CORPORATION RD** **MA RELEASE N/A**
1/2-1 **HYANNIS, MA 02601**
0.958 mi.
5060 ft.

Relative:
Higher

Actual:
48 ft.

SHWS:
Name: THE IRON HOUSE
Address: 95 CORPORATION RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0020088
Source Type: TANK
Release Town: BARNSTABLE
Notification Date: 09/28/2006
Category: TWO HR
Associated ID: Not reported
Current Status: RAO
Status Date: 01/24/2007
Phase: Not reported
Response Action Outcome: A2
Oil Or Haz Material: Not reported

Release:
Name: THE IRON HOUSE
Address: 95 CORPORATION RD
City,State,Zip: HYANNIS, MA 026010000
Release Tracking Number/Current Status: 4-0020088 / RAO
Primary ID: Not reported
Official City: BARNSTABLE
Notification: 09/28/2006
Category: TWO HR
Status Date: 01/24/2007
Phase: Not reported

THE IRON HOUSE (Continued) **S108117619**

Response Action Outcome: A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type: Not reported

Click here to access the MA DEP site for this facility:

Actions:

Action Type: Response Action Outcome - RAO
Action Status: RAO Statement Received
Action Date: 1/24/2007
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RLFA
Action Status: FOLOFF
Action Date: 10/2/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: RNFE
Action Status: Transmittal, Notice, or Notification Received
Action Date: 11/28/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Written Plan Received
Action Date: 11/28/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Immediate Response Action
Action Status: Oral Approval of Plan or Action
Action Date: 9/28/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 9/28/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 9/29/2006
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:

Chemical: HYDRAULIC OIL
Quantity: 30 gallons
Location Type: COMMERCIAL
Location Type: ROADWAY
Source: TANK

92
WSW
1/2-1
0.961 mi.
5075 ft.

FMR DOHERTY PROPERTIES
70 CORPORATION ST
HYANNIS PORT, MA 02601

MA SHWS **S117692234**
MA RELEASE **N/A**

Relative:
Higher

Actual:
52 ft.

SHWS:

Name:	FMR DOHERTY PROPERTIES
Address:	70 CORPORATION ST
City,State,Zip:	HYANNIS PORT, MA 026010000
Facility ID:	4-0025479
Source Type:	POT UPGRAD
Release Town:	BARNSTABLE
Notification Date:	01/30/2015
Category:	72 HR
Associated ID:	Not reported
Current Status:	DPS
Status Date:	07/23/2015
Phase:	Not reported
Response Action Outcome:	Not reported
Oil Or Haz Material:	Hazardous Material

Release:

Name:	FMR DOHERTY PROPERTIES
Address:	70 CORPORATION ST
City,State,Zip:	HYANNIS PORT, MA 026010000
Release Tracking Number/Current Status:	4-0025479 / DPS
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	01/30/2015
Category:	72 HR
Status Date:	07/23/2015
Phase:	Not reported
Response Action Outcome:	-
Oil / Haz Material Type:	Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	Release Disposition
Action Status:	Reportable Release under MGL 21E
Action Date:	1/30/2015
Response Action Outcome:	Not reported

Action Type:	RLFA
Action Status:	FLDRUN
Action Date:	10/14/2015
Response Action Outcome:	Not reported

Action Type:	Downgradient Property Status
Action Status:	Level I - Technical Screen Audit
Action Date:	10/9/2015
Response Action Outcome:	Not reported

Action Type:	Downgradient Property Status
Action Status:	Modified Transmittal Received - DPS Transfer
Action Date:	12/15/2022
Response Action Outcome:	Not reported

FMR DOHERTY PROPERTIES (Continued) **S117692234**

Action Type: Immediate Response Action
Action Status: Written Plan Received
Action Date: 4/8/2015
Response Action Outcome: Not reported

Action Type: RNFE
Action Status: Transmittal, Notice, or Notification Received
Action Date: 4/8/2015
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Completion Statement Received
Action Date: 5/30/2015
Response Action Outcome: Not reported

Action Type: Immediate Response Action
Action Status: Imminent Hazard Evaluation Received
Action Date: 5/30/2015
Response Action Outcome: Not reported

Action Type: Downgradient Property Status
Action Status: Transmittal, Notice, or Notification Received
Action Date: 7/23/2015
Response Action Outcome: Not reported

Chemicals:
Chemical: 1,2-DICHLOROETHENE
Quantity: 23 micrograms per liter
Chemical: TRICHLOROETHENE
Quantity: 14 micrograms per liter
Chemical: TRICHLOROETHENE
Quantity: 45.2 UG/M3
Location Type: COMMERCIAL
Source: POT UPGRAD

93
NW
1/2-1
0.964 mi.
5092 ft.

THE CAPE COD CO
100 BREEDS HILL RD
HYANNIS, MA 02601

MA SHWS **S106513062**
MA RELEASE **N/A**
MA AIRS
MA HW GEN

Relative:
Higher

Actual:
62 ft.

SHWS:
Name: THE CAPE COD CO
Address: 100 BREEDS HILL RD
City,State,Zip: HYANNIS, MA 026010000
Facility ID: 4-0000937
Source Type: UNKNOWN
Release Town: BARNSTABLE
Notification Date: 06/19/1990
Category: NONE
Associated ID: Not reported
Current Status: RAO
Status Date: 01/08/2003
Phase: PHASE III
Response Action Outcome: A2
Oil Or Haz Material: Hazardous Material

THE CAPE COD CO (Continued) **S106513062**

Release:

Name:	THE CAPE COD CO
Address:	100 BREEDS HILL RD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0000937 / RAO
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	06/19/1990
Category:	NONE
Status Date:	01/08/2003
Phase:	PHASE III
Response Action Outcome:	A2 - A permanent solution has been achieved. Contamination has not been reduced to background.
Oil / Haz Material Type:	Hazardous Material

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	1/28/1992
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	1/8/2003
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Phase 4
Action Status:	Completion Statement Received
Action Date:	1/8/2003
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Tier Classification
Action Status:	Permit Extension Received
Action Date:	10/26/2001
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Tier Classification
Action Status:	Legal Notice Published
Action Date:	11/2/2001
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	TREGS
Action Status:	BWSC04
Action Date:	12/1/1994
Response Action Outcome:	A permanent solution has been achieved. Contamination has not been reduced to background.
Action Type:	Tier Classification
Action Status:	Transmittal, Notice, or Notification Received

THE CAPE COD CO (Continued) **S106513062**

Action Date: 12/1/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Permit Effective Date
Action Date: 12/1/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 12/1/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 12/15/1998
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 2
Action Status: Tier 1A or Priority Submittal Approved
Action Date: 2/21/1992
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Tier Classification
Action Status: Tier 1A Classification
Action Date: 5/23/1994
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 6/19/1990
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Release Disposition
Action Status: Valid Transition Site
Action Date: 6/19/1990
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: A Notice sent to a Potentially Responsible Party (PRP)
Action Status: A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date: 7/23/1990
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 3
Action Status: Completion Statement Received
Action Date: 8/11/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

THE CAPE COD CO (Continued) **S106513062**

Action Type: Partial RAO for this RTN
Action Status: RAO Statement Received
Action Date: 8/11/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Phase 2
Action Status: Completion Statement Received
Action Date: 8/11/1997
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: Compliance and Enforcement Action
Action Status: Notice of Non-Compliance Issued
Action Date: 8/24/2001
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Action Type: BWS20
Action Status: APPROV
Action Date: Not reported
Response Action Outcome: A permanent solution has been achieved. Contamination has not been reduced to background.

Chemicals:
Chemical: UNKNOWN CHEMICAL OF TYPE - HAZARDOUS MATERIAL
Quantity: Not reported
Location Type: INDUSTRIAL
Location Type: MANUFACT
Source: UNKNOWN

AIRS:
AQID: 1200924
Name: CAPE COD POTATO CHIPS
Address: 100 BREEDS HILL RD
Address 2: Not reported
City,State,Zip: HYANNIS, MA 02601
Branch: Not reported
Facility Status: Not reported
Permit Code: Not reported
Permit Name: Not reported
Owner Name: SNYDERS LANCE, INC.
Region: Not reported
Application Tracking Number: Not reported
Facility Account: Not reported
Date Closed: Not reported
Applicant Name: Not reported
Applicant Address: Not reported
Applicant City: Not reported
Applicant State: Not reported
Applicant Zip: Not reported
Applicant Telephone: Not reported
Primary NAICS: Y
NAICS Code: 311919
NAICS Description: Other Snack Food Manufacturing
Latitude: 41.680807

THE CAPE COD CO (Continued) **S106513062**

Longitude:	-70.29457
EMI:	
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported

THE CAPE COD CO (Continued) **S106513062**

P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported

THE CAPE COD CO (Continued) **S106513062**

EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported

AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported

THE CAPE COD CO (Continued) **S106513062**

NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported

THE CAPE COD CO (Continued) **S106513062**

AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported

THE CAPE COD CO (Continued) **S106513062**

SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2020
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2020
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2020
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924

THE CAPE COD CO (Continued) **S106513062**

Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2020
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported

THE CAPE COD CO (Continued) **S106513062**

NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2020
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2020
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	Not reported
Actual Emission:	Not reported
Emission Year:	2020
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	AMMONIA
Actual Emission:	0.1366
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported

AQID:	1200924
Pollutant:	CARBON MONOXIDE
Actual Emission:	3.5847
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported

AQID:	1200924
Pollutant:	HALOGENATED ORGANIC COMPOUND
Actual Emission:	0
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported

AQID:	1200924
Pollutant:	HYDROCARBON
Actual Emission:	0
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported

THE CAPE COD CO (Continued) **S106513062**

FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	NITROGEN OXIDES (NOx)

THE CAPE COD CO (Continued) **S106513062**

Actual Emission:	4.2676
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported

THE CAPE COD CO (Continued) **S106513062**

CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	PM10, FILTERABLE
Actual Emission:	2.3817
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	PM2.5, FILTERABLE
Actual Emission:	2.3817
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported

THE CAPE COD CO (Continued) **S106513062**

SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported

THE CAPE COD CO (Continued) **S106513062**

DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported

AQID:	1200924
Pollutant:	SULFUR DIOXIDE
Actual Emission:	0.0256
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported

AQID:	1200924
Pollutant:	VOLATILE ORGANIC COMPOUNDS (VOC)
Actual Emission:	0.296
Emission Year:	2013
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported

AQID:	1200924
Pollutant:	CARBON MONOXIDE
Actual Emission:	1.6838
Emission Year:	2020
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported

AQID:	1200924
Pollutant:	NITROGEN OXIDES (NOx)
Actual Emission:	2.6139
Emission Year:	2020
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported

AQID:	1200924
Pollutant:	PM10, FILTERABLE
Actual Emission:	1.162
Emission Year:	2020
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported

THE CAPE COD CO (Continued) **S106513062**

ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	PM2.5, FILTERABLE
Actual Emission:	1.162

THE CAPE COD CO (Continued) **S106513062**

Emission Year:	2020
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported

THE CAPE COD CO (Continued) **S106513062**

NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported

THE CAPE COD CO (Continued) **S106513062**

PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	SULFUR DIOXIDE
Actual Emission:	0.0132
Emission Year:	2020
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported
SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported

THE CAPE COD CO (Continued) **S106513062**

P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported
Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported
AQID:	1200924
Pollutant:	VOLATILE ORGANIC COMPOUNDS (VOC)
Actual Emission:	0.1284
Emission Year:	2020
DEP Number:	Not reported
Facility Contact:	Not reported
Contact Telephone:	Not reported
Contact Email:	Not reported
Region Code:	Not reported
FMF ID:	Not reported
ORIS Code:	Not reported
AQ Class:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
DEP Stack Number:	Not reported
Stack Height:	Not reported
Stack Diameter:	Not reported
Stack Liner:	Not reported
Stack Max Temp:	Not reported
Stack Max Velocity:	Not reported
Stack Flow:	Not reported
DEP EU Number:	Not reported
Segment Number:	Not reported
Is Exempt From 702:	Not reported
Equipment Type Name:	Not reported
Manufacturer:	Not reported
Model Number:	Not reported
Installed Date:	Not reported
EU Decom Date:	Not reported
Max Input Rating:	Not reported
Approval Number:	Not reported
Approval Date:	Not reported
Q1 Operation Percent:	Not reported
Q2 Operation Percent:	Not reported
Q3 Operation Percent:	Not reported
Q4 Operation Percent:	Not reported
Hours Daily:	Not reported
Days Weekly:	Not reported
Weeks Yearly:	Not reported
Type of Material:	Not reported
Case Number:	Not reported
Throughput Data:	Not reported
Sulfur Content Percent:	Not reported
Ash Content Percent:	Not reported
Operating Restrictions:	Not reported
SCC Code:	Not reported

THE CAPE COD CO (Continued) **S106513062**

SCC Description:	Not reported
Comments:	Not reported
P10 Act Amount:	Not reported
P10 Act UOM:	Not reported
P10 POT Amount:	Not reported
P10 POT UOM:	Not reported
P10 Per Amount:	Not reported
P10 Per UOM:	Not reported
SO2 Act Amount:	Not reported
SO2 Act UOM:	Not reported
S02 POT Amount:	Not reported
SO2 POT UOM:	Not reported
SO2 Per Amount:	Not reported
SO2 Per UOM:	Not reported
NO2 Act Amount:	Not reported
NO2 Act UOM:	Not reported
NO2 POT Amount:	Not reported
NO2 POT UOM:	Not reported
NO2 Per Amount:	Not reported
NO2 Per UOM:	Not reported
CO Act Amount:	Not reported
CO Act UOM:	Not reported
CO POT Amount:	Not reported
CO POT UOM:	Not reported
CO Per Amount:	Not reported
CO Per UOM:	Not reported
VOC Act Amount:	Not reported
VOC Act UOM:	Not reported
VOC POT Amount:	Not reported
VOC POT UOM:	Not reported
VOC Per Amount:	Not reported
VOC Per UOM:	Not reported
PB Act Amount:	Not reported
PB Act UOM:	Not reported
PB POT Amount:	Not reported
PB POT UOM:	Not reported
PB Per Amount:	Not reported
PB Per UOM:	Not reported
P25 Act Amount:	Not reported
P25 Act UOM:	Not reported
P25 POT Amount:	Not reported
P25 POT UOM:	Not reported
P25 Per Amount:	Not reported
P25 Per UOM:	Not reported
NH3 Act Amount:	Not reported
NH3 Act UOM:	Not reported
NH3 POT Amount:	Not reported
NH3 POT UOM:	Not reported
NH3 Per Amount:	Not reported
NH3 Per UOM:	Not reported
Object ID:	Not reported
NAICS Code Count:	Not reported
Primary NAICS:	Not reported
Release Point:	Not reported
Stack Combined Units:	Not reported
Stack Decom Date:	Not reported
DEP Segment Number:	Not reported

THE CAPE COD CO (Continued) **S106513062**

Category Type:	Not reported
Emergency Gen:	Not reported
EU Combined Units:	Not reported
Chemical Name:	Not reported
Max Hourly Fuel Rating:	Not reported
Max UOM:	Not reported
Segment Decom Date:	Not reported
Actual Material Used:	Not reported
Actual Material Used UOM:	Not reported
P10 Annual Emission Restrictions:	Not reported
P25 Annual Emission Restrictions:	Not reported
SO2 Annual Emission Restrictions:	Not reported
NO2 Annual Emission Restrictions:	Not reported
CO Annual Emission Restrictions:	Not reported
PB Annual Emission Restrictions:	Not reported
NH3 Annual Emission Restrictions:	Not reported
VOC Annual Emission Restrictions:	Not reported

AQID:	Not reported
Name:	CAMPBELL SNACKS
Address:	100 BREEDS HILL RD
Address 2:	Not reported
City,State,Zip:	HYANNIS, MA 02601
Branch:	SE
Facility Status:	APPROV
Permit Code:	AQ01
Permit Name:	Plan Approval Limited
Owner Name:	Not reported
Region:	SE
Application Tracking Number:	X250547
Facility Account:	54768
Date Closed:	03/29/2012
Applicant Name:	SNYDERS LANCE DBA CAPE COD POTATO CHIPS
Applicant Address:	100 BREEDS HILL RD
Applicant City:	HYANNIS
Applicant State:	MA
Applicant Zip:	02601
Applicant Telephone:	Not reported
Primary NAICS:	Not reported
NAICS Code:	Not reported
NAICS Description:	Not reported
Latitude:	Not reported
Longitude:	Not reported

HW GEN:

Name:	CAMPBELL SNACKS
Address:	100 BREEDS HILL RD
City,State,Zip:	HYANNIS, MA 02601
EPA Id:	MAV000008485
RCRA Generator Status:	VSQG
State Generator Status:	VQG-MA

94
WSW
1/2-1
0.979 mi.
5171 ft.

NEVADA BOB S BDP
30 CORPORATION RD
HYANNIS, MA 02601

MA SHWS **S106508880**
MA LUST **N/A**
MA RELEASE

Relative:
Higher

Actual:
46 ft.

SHWS:

Name:	NEVADA BOB S BDP
Address:	30 CORPORATION RD
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0000782
Source Type:	UNKNOWN
Release Town:	BARNSTABLE
Notification Date:	09/11/1989
Category:	NONE
Associated ID:	Not reported
Current Status:	DEPNFA
Status Date:	07/23/1993
Phase:	Not reported
Response Action Outcome:	Not reported
Oil Or Haz Material:	Oil

LUST:

Facility:

Name:	NEVADA BOB S BDP
Address:	30 CORPORATION RD
City,State,Zip:	HYANNIS, MA 026010000
Current Status:	**DEP No Further Action**
Release Tracking Number/Current Status:	4-0000782 / DEPNFA
Status Date:	07/23/1993
Source Type:	UST
Release Town:	BARNSTABLE
Notification Date:	09/11/1989
Category:	NONE
Associated ID:	Not reported
Phase:	Not reported
Response Action Outcome:	-
Oil Or Haz Material:	Oil
Location Type:	COMMERCIAL
Source:	UNKNOWN
Source:	UST

Click here to access the MA DEP site for this facility:

Chemicals:

Chemical:	VOCS
Quantity:	Not reported

Actions:

Action Type:	TREGS
Action Status:	DEPNFA
Action Date:	7/23/1993
Response Action Outcome:	Not reported
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)

NEVADA BOB S BDP (Continued) **S106508880**

Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	9/11/1989
Response Action Outcome:	Not reported
Action Type:	Release Disposition
Action Status:	Valid Transition Site
Action Date:	9/11/1989
Response Action Outcome:	Not reported

Release:

Name:	NEVADA BOB S BDP
Address:	30 CORPORATION RD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0000782 / DEPNFA
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	09/11/1989
Category:	NONE
Status Date:	07/23/1993
Phase:	Not reported
Response Action Outcome:	-
Oil / Haz Material Type:	Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	TREGS
Action Status:	DEPNFA
Action Date:	7/23/1993
Response Action Outcome:	Not reported
Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	9/11/1989
Response Action Outcome:	Not reported
Action Type:	Release Disposition
Action Status:	Valid Transition Site
Action Date:	9/11/1989
Response Action Outcome:	Not reported

Chemicals:

Chemical:	VOCS
Quantity:	Not reported
Location Type:	COMMERCIAL
Source:	UNKNOWN
Source:	UST

95 WSW 1/2-1 0.999 mi. 5274 ft. | **ANCHOR AUTO BODY**
7 CORPORATION RD
HYANNIS, MA 02601 | **MA SHWS** **MA RELEASE** **MA HW GEN** | **S106513261** **N/A**

Relative: Higher

Actual: 49 ft.

SHWS:

Name:	NO LOCATION AID
Address:	7 CORPORATION RD
City,State,Zip:	HYANNIS, MA 026010000
Facility ID:	4-0014148
Source Type:	Not reported
Release Town:	BARNSTABLE
Notification Date:	05/04/1998
Category:	120 DY
Associated ID:	Not reported
Current Status:	RAO
Status Date:	12/22/1998
Phase:	Not reported
Response Action Outcome:	B1
Oil Or Haz Material:	Oil

Release:

Name:	NO LOCATION AID
Address:	7 CORPORATION RD
City,State,Zip:	HYANNIS, MA 026010000
Release Tracking Number/Current Status:	4-0014148 / RAO
Primary ID:	Not reported
Official City:	BARNSTABLE
Notification:	05/04/1998
Category:	120 DY
Status Date:	12/22/1998
Phase:	Not reported
Response Action Outcome:	B1 - Remedial actions have not been conducted because a level of No Significant Risk exists.
Oil / Haz Material Type:	Oil

Click here to access the MA DEP site for this facility:

Actions:

Action Type:	A Notice sent to a Potentially Responsible Party (PRP)
Action Status:	A MassDEP piece of correspondence was issued (approvals, NORs, etc.
Action Date:	10/27/1998
Response Action Outcome:	Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type:	Phase 2
Action Status:	Completion Statement Received
Action Date:	12/22/1998
Response Action Outcome:	Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type:	Response Action Outcome - RAO
Action Status:	RAO Statement Received
Action Date:	12/22/1998
Response Action Outcome:	Remedial actions have not been conducted because a level of No Significant Risk exists.

ANCHOR AUTO BODY (Continued) **S106513261**

Action Type: Release Disposition
Action Status: Reportable Release under MGL 21E
Action Date: 5/4/1998
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Action Type: RNF
Action Status: Reportable Release under MGL 21E
Action Date: 8/25/1998
Response Action Outcome: Remedial actions have not been conducted because a level of No Significant Risk exists.

Chemicals:
Chemical: AROMATIC HYDROCARBONS C11 THRU C22
Quantity: 566 parts per billion
Chemical: ALIPHATIC HYDROCARBONS C19 THRU C36
Quantity: 186 parts per billion

HW GEN:
Name: ANCHOR AUTO BODY
Address: 7 CORPORATION RD
City,State,Zip: HYANNIS, MA 02601
EPA Id: MAD981215288
RCRA Generator Status: VSQG
State Generator Status: Not reported

Count: 7 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
HYANNIS	S106513241	TRANSFORMER VAULT	ATTUCKS WAY	02601	MA SHWS, MA RELEASE
HYANNIS	U001004345	SUNOCO GAS STA	91 BARNSTABLE RD	02601	MA LUST, MA RELEASE
HYANNIS	S108347891	COSTA RESIDENCE	10 BROOKSHIRE RD	02601	MA SHWS, MA RELEASE
HYANNIS	S106513414	BARNSTABLE RD	CENTER ST	02601	MA SHWS, MA RELEASE
HYANNIS	S126024859	D'OLIMIPIO REAL ESTATE	43-55 IYANNOUGH RD	02601	MA SHWS, MA RELEASE
HYANNIS	1026571261	BARNSTABLE D.P.W.	TOWN OF BARNSTABLE DEPT. OF PU	02601	PRP
YARMOUTH	S127590310	ROADWAY RELEASE	MOST OF WINTER STREET	02673	MA SHWS, MA RELEASE

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: N/A
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: N/A
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: N/A
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 03/26/2023
Date Data Arrived at EDR: 03/28/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 06/23/2023
Next Scheduled EDR Contact: 10/09/2023
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/20/2023
Next Scheduled EDR Contact: 10/02/2023
Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (888) 372-7341
Last EDR Contact: 06/20/2023
Next Scheduled EDR Contact: 10/02/2023
Data Release Frequency: Quarterly

Lists of Federal RCRA generators

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (888) 372-7341
Last EDR Contact: 06/20/2023
Next Scheduled EDR Contact: 10/02/2023
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (888) 372-7341
Last EDR Contact: 06/20/2023
Next Scheduled EDR Contact: 10/02/2023
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (888) 372-7341
Last EDR Contact: 06/20/2023
Next Scheduled EDR Contact: 10/02/2023
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/08/2023
Date Data Arrived at EDR: 02/09/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 82

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 08/21/2023
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 02/20/2023
Date Data Arrived at EDR: 02/21/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 02/20/2023
Date Data Arrived at EDR: 02/21/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/20/2023
Date Data Arrived at EDR: 03/21/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 70

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/20/2023
Next Scheduled EDR Contact: 10/02/2023
Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

SHWS: Site Transition List

Contains information on releases of oil and hazardous materials that have been reported to DEP.

Date of Government Version: 04/05/2023
Date Data Arrived at EDR: 04/06/2023
Date Made Active in Reports: 06/22/2023
Number of Days to Update: 77

Source: Department of Environmental Protection
Telephone: 617-292-5990
Last EDR Contact: 04/06/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Quarterly

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF: Solid Waste Facility Database/Transfer Stations

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/02/2022
Date Data Arrived at EDR: 05/03/2022
Date Made Active in Reports: 07/22/2022
Number of Days to Update: 80

Source: Department of Environmental Protection
Telephone: 617-292-5989
Last EDR Contact: 06/26/2023
Next Scheduled EDR Contact: 10/09/2023
Data Release Frequency: Annually

LF PROFILES: Landfill Profiles Listing

This spreadsheet describes landfills that have actively accepted waste or have closed under MassDEP Solid Waste Regulations first adopted in 1971 (310 CMR 16.00 and 310 CMR 19.00). The list does not include landfills that closed before 1971 (and which never had a MassDEP permit or approval), or for which agency data is incomplete.

Date of Government Version: 07/01/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 12/14/2015
Number of Days to Update: 48

Source: Department of Environmental Protection
Telephone: 617-292-5868
Last EDR Contact: 06/29/2023
Next Scheduled EDR Contact: 10/09/2023
Data Release Frequency: Varies

Lists of state and tribal leaking storage tanks

LUST: Leaking Underground Storage Tank Listing

Sites within the Leaking Underground Storage Tank Listing that have a UST listed as its source.

Date of Government Version: 04/05/2023
Date Data Arrived at EDR: 04/06/2023
Date Made Active in Reports: 06/22/2023
Number of Days to Update: 77

Source: Department of Environmental Protection
Telephone: 617-292-5990
Last EDR Contact: 04/06/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Quarterly

LAST: Leaking Aboveground Storage Tank Sites
Sites within the Releases Database that have a AST listed as its source.

Date of Government Version: 04/05/2023
Date Data Arrived at EDR: 04/06/2023
Date Made Active in Reports: 06/22/2023
Number of Days to Update: 77
Source: Department of Environmental Protection
Telephone: 617-292-5500
Last EDR Contact: 04/06/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 11/26/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 05/08/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/19/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 134

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 03/08/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 82

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 06/27/2023
Next Scheduled EDR Contact: 10/16/2023
Data Release Frequency: Varies

UST: Summary Listing of all the Tanks Registered in the State of Massachusetts
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 03/08/2023
Date Data Arrived at EDR: 03/10/2023
Date Made Active in Reports: 05/26/2023
Number of Days to Update: 77

Source: Department of Fire Services, Office of the Public Safety
Telephone: 617-556-1035
Last EDR Contact: 05/31/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Quarterly

AST 2: Aboveground Storage Tanks
Aboveground storage tanks

Date of Government Version: 01/09/2023
Date Data Arrived at EDR: 01/12/2023
Date Made Active in Reports: 03/30/2023
Number of Days to Update: 77

Source: Department of Fire Services
Telephone: 978-567-3181
Last EDR Contact: 04/05/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Varies

AST: Aboveground Storage Tank Database
Registered Aboveground Storage Tanks.

Date of Government Version: 12/16/2022
Date Data Arrived at EDR: 01/10/2023
Date Made Active in Reports: 03/06/2023
Number of Days to Update: 55

Source: Department of Public Safety
Telephone: 617-556-1035
Last EDR Contact: 04/13/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: No Update Planned

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 134

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/19/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

INST CONTROL: Sites With Activity and Use Limitation

Activity and Use Limitations establish limits and conditions on the future use of contaminated property, and therefore allow cleanups to be tailored to these uses.

Date of Government Version: 04/05/2023
Date Data Arrived at EDR: 04/06/2023
Date Made Active in Reports: 06/22/2023
Number of Days to Update: 77

Source: Department of Environmental Protection
Telephone: 617-292-5990
Last EDR Contact: 04/06/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Quarterly

Lists of state and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/13/2023
Next Scheduled EDR Contact: 10/02/2023
Data Release Frequency: Varies

Lists of state and tribal brownfield sites

BROWNFIELDS 2: Potential Brownfields Listing

A listing of potential brownfields site locations in the state.

Date of Government Version: 12/03/2019
Date Data Arrived at EDR: 01/29/2021
Date Made Active in Reports: 04/21/2021
Number of Days to Update: 82

Source: Department of Environmental Protection
Telephone: 617-556-1007
Last EDR Contact: 04/27/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Varies

BROWNFIELDS: Completed Brownfields Covenants Listing

Under Massachusetts law, M.G.L. c. 21E is the statute that governs the cleanup of releases of oil and/or hazardous material to the environment. The Brownfields Act of 1998 amended M.G.L. c. 21E by establishing significant liability relief and financial incentives to spur the redevelopment of brownfields, while ensuring that the Commonwealth's environmental standards are met. Most brownfields are redeveloped with the benefit of liability protections that operate automatically under M.G.L. c. 21E.

Date of Government Version: 04/05/2017
Date Data Arrived at EDR: 08/03/2017
Date Made Active in Reports: 10/10/2017
Number of Days to Update: 68

Source: Office of the Attorney General
Telephone: 617-963-2423
Last EDR Contact: 04/27/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Annually

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 04/06/2023
Date Data Arrived at EDR: 04/13/2023
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/08/2023
Next Scheduled EDR Contact: 09/25/2023
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 04/19/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/12/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176
Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 04/27/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 01/06/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 8
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 01/06/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 8
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Quarterly

Local Land Records

LIENS: Liens Information Listing
A listing of environmental liens.

Date of Government Version: 03/07/2018
Date Data Arrived at EDR: 03/09/2018
Date Made Active in Reports: 06/21/2018
Number of Days to Update: 104
Source: Department of Environmental Protection
Telephone: 617-292-5628
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/19/2023
Date Data Arrived at EDR: 03/21/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 70

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 06/20/2023
Next Scheduled EDR Contact: 10/02/2023
Data Release Frequency: Quarterly

MA SPILLS: Historical Spill List

The Spills Database was the release notification tracking system for spills that occurred prior to October 1, 1993. This information should be considered to be primarily of historical interest since all of the listed spills have either been cleaned up or assigned new tracking numbers and moved to the Reportable Releases or Sites Transition List databases.

Date of Government Version: 09/30/1993
Date Data Arrived at EDR: 12/03/2003
Date Made Active in Reports: 12/31/2003
Number of Days to Update: 28

Source: Department of Environmental Protection
Telephone: 617-292-5720
Last EDR Contact: 12/03/2003
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

RELEASE: Reportable Releases

Contains information on all releases of oil and hazardous materials that have been reported to DEP

Date of Government Version: 04/05/2023
Date Data Arrived at EDR: 04/06/2023
Date Made Active in Reports: 06/22/2023
Number of Days to Update: 77

Source: Department of Environmental Protection
Telephone: 617-292-5990
Last EDR Contact: 04/06/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 12/11/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/08/2013
Number of Days to Update: 36

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SPILLS 80: SPILLS80 data from FirstSearch

Spills 80 includes those spill and release records available from FirstSearch databases prior to 1990. Typically, they may include chemical, oil and/or hazardous substance spills recorded before 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 80.

Date of Government Version: 03/10/1998
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 03/05/2013
Number of Days to Update: 61

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (888) 372-7341
Last EDR Contact: 06/20/2023
Next Scheduled EDR Contact: 10/02/2023
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 02/01/2023
Date Data Arrived at EDR: 02/14/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 77

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 05/16/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 06/07/2021
Date Data Arrived at EDR: 07/13/2021
Date Made Active in Reports: 03/09/2022
Number of Days to Update: 239

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/11/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/03/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 02/03/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/11/2023
Next Scheduled EDR Contact: 08/21/2023
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/13/2023
Date Data Arrived at EDR: 03/21/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 06/20/2023
Next Scheduled EDR Contact: 10/02/2023
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/01/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/04/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 06/14/2022
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 283

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/16/2023
Next Scheduled EDR Contact: 09/25/2023
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 02/16/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 75

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/19/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 01/17/2023
Date Data Arrived at EDR: 01/18/2023
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 91

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/18/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/27/2022
Date Data Arrived at EDR: 05/04/2022
Date Made Active in Reports: 05/10/2022
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 06/12/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/20/2023
Date Data Arrived at EDR: 04/04/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 66

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/04/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 06/27/2023
Next Scheduled EDR Contact: 10/16/2023
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/15/2023
Date Data Arrived at EDR: 03/21/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 70

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 04/13/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/22/2022
Number of Days to Update: 84

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 05/04/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 06/22/2023
Next Scheduled EDR Contact: 10/09/2023
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80
Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 04/25/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 01/12/2023
Date Made Active in Reports: 04/07/2023
Number of Days to Update: 85

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 06/27/2023
Next Scheduled EDR Contact: 10/16/2023
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 06/20/2023
Next Scheduled EDR Contact: 10/02/2023
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/06/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 03/03/2023
Date Data Arrived at EDR: 03/03/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 98

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 04/26/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/24/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/02/2023
Date Data Arrived at EDR: 02/22/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 84

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/24/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 04/03/2023
Date Data Arrived at EDR: 04/04/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 66

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 05/24/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 01/07/2022
Date Data Arrived at EDR: 02/24/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 82

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/17/2023
Date Data Arrived at EDR: 03/17/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 74

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 06/13/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/02/2023
Date Data Arrived at EDR: 02/28/2023
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 24

Source: EPA
Telephone: (617) 918-1111
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 05/17/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 11/09/2021
Date Data Arrived at EDR: 10/20/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 82

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 04/27/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 03/25/2023
Date Data Arrived at EDR: 03/31/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 06/29/2023
Next Scheduled EDR Contact: 10/16/2023
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/13/2023
Date Data Arrived at EDR: 02/14/2023
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 64

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 05/17/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Quarterly

PFAS NPL: Superfund Sites with PFAS Detections Information

EPA's Office of Land and Emergency Management and EPA Regional Offices maintain data describing what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment.

Date of Government Version: 06/07/2023
Date Data Arrived at EDR: 06/08/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 1

Source: Environmental Protection Agency
Telephone: 703-603-8895
Last EDR Contact: 06/08/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS FEDERAL SITES: Federal Sites PFAS Information

Several federal entities, such as the federal Superfund program, Department of Defense, National Aeronautics and Space Administration, Department of Transportation, and Department of Energy provided information for sites with known or suspected detections at federal facilities.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 04/07/2023
Number of Days to Update: 8

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS TSCA: PFAS Manufacture and Imports Information

EPA issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. EPA publishes non-confidential business information (non-CBI) and includes descriptive information about each site, corporate parent, production volume, other manufacturing information, and processing and use information.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS RCRA MANIFEST: PFAS Transfers Identified In the RCRA Database Listing

To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: PFAS, PFOA, PFOS, PERFL, AFFF, GENX, GEN-X (plus the VT waste codes). These keywords were searched for in the following text fields: Manifest handling instructions (MANIFEST_HANDLING_INSTR), Non-hazardous waste description (NON_HAZ_WASTE_DESCRIPTION), DOT printed information (DOT_PRINTED_INFORMATION), Waste line handling instructions (WASTE_LINE_HANDLING_INSTR), Waste residue comments (WASTE_RESIDUE_COMMENTS).

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 33

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS ATSDR: PFAS Contamination Site Location Listing

PFAS contamination site locations from the Department of Health & Human Services, Center for Disease Control & Prevention. ATSDR is involved at a number of PFAS-related sites, either directly or through assisting state and federal partners. As of now, most sites are related to drinking water contamination connected with PFAS production facilities or fire training areas where aqueous film-forming firefighting foam (AFFF) was regularly used.

Date of Government Version: 06/24/2020
Date Data Arrived at EDR: 03/17/2021
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 601

Source: Department of Health & Human Services
Telephone: 202-741-5770
Last EDR Contact: 04/20/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Varies

PFAS WQP: Ambient Environmental Sampling for PFAS

The Water Quality Portal (WQP) is a part of a modernized repository storing ambient sampling data for all environmental media and tissue samples. A wide range of federal, state, tribal and local governments, academic and non-governmental organizations and individuals submit project details and sampling results to this public repository. The information is commonly used for research and assessments of environmental quality.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 33

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS NPDES: Clean Water Act Discharge Monitoring Information

Any discharger of pollutants to waters of the United States from a point source must have a National Pollutant Discharge Elimination System (NPDES) permit. The process for obtaining limits involves the regulated entity (permittee) disclosing releases in a NPDES permit application and the permitting authority (typically the state but sometimes EPA) deciding whether to require monitoring or monitoring with limits.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 04/07/2023
Number of Days to Update: 8

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS ECHO: Facilities in Industries that May Be Handling PFAS Listing

Regulators and the public have expressed interest in knowing which regulated entities may be using PFAS. EPA has developed a dataset from various sources that show which industries may be handling PFAS. Approximately 120,000 facilities subject to federal environmental programs have operated or currently operate in industry sectors with processes that may involve handling and/or release of PFAS.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 04/03/2023
Number of Days to Update: 4

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS ECHO FIRE TRAINING: Facilities in Industries that May Be Handling PFAS Listing

A list of fire training sites was added to the Industry Sectors dataset using a keyword search on the permitted facilitys name to identify sites where fire-fighting foam may have been used in training exercises. Additionally, you may view an example spreadsheet of the subset of fire training facility data, as well as the keywords used in selecting or deselecting a facility for the subset. as well as the keywords used in selecting or deselecting a facility for the subset. These keywords were tested to maximize accuracy in selecting facilities that may use fire-fighting foam in training exercises, however, due to the lack of a required reporting field in the data systems for designating fire training sites, this methodology may not identify all fire training sites or may potentially misidentify them.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 04/03/2023
Number of Days to Update: 4

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS PART 139 AIRPORT: All Certified Part 139 Airports PFAS Information Listing

Since July 1, 2006, all certified part 139 airports are required to have fire-fighting foam onsite that meet military specifications (MIL-F-24385) (14 CFR 139.317). To date, these military specification fire-fighting foams are fluorinated and have been historically used for training and extinguishing. The 2018 FAA Reauthorization Act has a provision stating that no later than October 2021, FAA shall not require the use of fluorinated AFFF. This provision does not prohibit the use of fluorinated AFFF at Part 139 civilian airports; it only prohibits FAA from mandating its use. The Federal Aviation Administration?s document AC 150/5210-6D - Aircraft Fire Extinguishing Agents provides guidance on Aircraft Fire Extinguishing Agents, which includes Aqueous Film Forming Foam (AFFF).

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 04/03/2023
Number of Days to Update: 4

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

AQUEOUS FOAM NRC: Aqueous Foam Related Incidents Listing

The National Response Center (NRC) serves as an emergency call center that fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. The spreadsheets posted to the NRC website contain initial incident data that has not been validated or investigated by a federal/state response agency. Response center calls from 1990 to the most recent complete calendar year where there was indication of Aqueous Film Forming Foam (AFFF) usage are included in this dataset. NRC calls may reference AFFF usage in the ?Material Involved? or ?Incident Description? fields.

Date of Government Version: 04/27/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/27/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS: PFAS Contaminated Sites Listing

Detection of Per- and Polyfluoroalkyl Substances (PFAS) in drinking water.

Date of Government Version: 12/09/2022
Date Data Arrived at EDR: 12/12/2022
Date Made Active in Reports: 03/06/2023
Number of Days to Update: 84

Source: Department of Environmental Protection
Telephone: 617-292-6770
Last EDR Contact: 06/22/2023
Next Scheduled EDR Contact: 10/09/2023
Data Release Frequency: Varies

AIRS: Permitted Facilities Listing

A listing of Air Quality permit applications.

Date of Government Version: 04/07/2023
Date Data Arrived at EDR: 04/11/2023
Date Made Active in Reports: 06/22/2023
Number of Days to Update: 72

Source: Department of Environmental Protection
Telephone: 617-292-5789
Last EDR Contact: 04/05/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Varies

ASBESTOS: Asbestos Notification Listing

Asbestos sites

Date of Government Version: 05/16/2023
Date Data Arrived at EDR: 05/17/2023
Date Made Active in Reports: 05/25/2023
Number of Days to Update: 8

Source: Department of Environmental Protection
Telephone: 617-292-5982
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

DRYCLEANERS: Regulated Drycleaning Facilities

A listing of Department of Environmental Protection regulated drycleaning facilities that use perchloroethylene under the Environmental Results Program.

Date of Government Version: 04/19/2023
Date Data Arrived at EDR: 04/20/2023
Date Made Active in Reports: 05/25/2023
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 617-292-5633
Last EDR Contact: 04/19/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Varies

ENFORCEMENT: Enforcement Action Cases

A listing of enforcement action cases tracked by Department of Environmental Protection programs, including Solid Waste and Hazardous Waste.

Date of Government Version: 04/05/2023
Date Data Arrived at EDR: 04/06/2023
Date Made Active in Reports: 06/22/2023
Number of Days to Update: 77

Source: Department of Environmental Quality
Telephone: 617-292-5979
Last EDR Contact: 04/05/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Information for hazardous waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 12/01/2010
Date Data Arrived at EDR: 12/23/2010
Date Made Active in Reports: 02/03/2011
Number of Days to Update: 42

Source: Department of Environmental Protection
Telephone: 617-292-5970
Last EDR Contact: 05/31/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for underground storage tanks. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 03/08/2023
Date Data Arrived at EDR: 03/10/2023
Date Made Active in Reports: 05/26/2023
Number of Days to Update: 77

Source: Office of State Fire Marshal
Telephone: 978-567-3100
Last EDR Contact: 05/31/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Varies

Financial Assurance 3: Financial Assurance Information listing

Information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay

Date of Government Version: 10/24/2022
Date Data Arrived at EDR: 01/12/2023
Date Made Active in Reports: 03/07/2023
Number of Days to Update: 54

Source: Department of Environmental Protection
Telephone: 617-292-5970
Last EDR Contact: 06/27/2023
Next Scheduled EDR Contact: 10/16/2023
Data Release Frequency: Varies

GWDP: Ground Water Discharge Permits

The Ground Water Discharge Permits datalayer (formerly known as Groundwater Discharge Points) is a statewide point dataset containing approximate locations of permitted discharges to groundwater.

Date of Government Version: 11/03/2022
Date Data Arrived at EDR: 01/24/2023
Date Made Active in Reports: 04/12/2023
Number of Days to Update: 78

Source: MassGIS
Telephone: 617-556-1150
Last EDR Contact: 04/25/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HW GEN: List of Massachusetts Hazardous Waste Generators

Permanent generator identification numbers for all Massachusetts generators of hazardous waste and waste oil that have registered with or notified MassDEP of their hazardous waste activities.

Date of Government Version: 03/17/2023
Date Data Arrived at EDR: 03/21/2023
Date Made Active in Reports: 06/06/2023
Number of Days to Update: 77

Source: Department of Environmental Protection
Telephone: 617-292-5500
Last EDR Contact: 06/15/2023
Next Scheduled EDR Contact: 10/02/2023
Data Release Frequency: Semi-Annually

MERCURY: Mercury Product Recyling Drop-Off Locations Listing

A listing of locations, collecting and recycling for mercury-added products. Mercury is toxic to the human nervous system, as well as fish and animals. Mercury can enter the body either through skin absorption or through inhalation of mercury vapors. At room temperature, small beads of mercury will vaporize.

Date of Government Version: 09/26/2022
Date Data Arrived at EDR: 09/26/2022
Date Made Active in Reports: 12/09/2022
Number of Days to Update: 74

Source: Department of Environmental Protection
Telephone: 617-292-5632
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

NPDES: NPDES Permit Listing

Listing of treatment plants in Massachusetts that hold permits to discharge to groundwater.

Date of Government Version: 12/16/2022
Date Data Arrived at EDR: 02/07/2023
Date Made Active in Reports: 02/14/2023
Number of Days to Update: 7

Source: Department of Environmental Protection
Telephone: 508-767-2781
Last EDR Contact: 05/11/2023
Next Scheduled EDR Contact: 08/21/2023
Data Release Frequency: Varies

TIER 2: Tier 2 Information Listing

A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 07/19/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 29

Source: Massachusetts Emergency Management Agency
Telephone: 508-820-2019
Last EDR Contact: 04/19/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Annually

TSD: TSD Facility

List of Licensed Hazardous Waste Treatment, Storage Disposal Facilities (TSDFs) in Massachusetts.

Date of Government Version: 03/17/2023
Date Data Arrived at EDR: 03/21/2023
Date Made Active in Reports: 06/06/2023
Number of Days to Update: 77

Source: Department of Environmental Protection
Telephone: 617-292-5580
Last EDR Contact: 06/15/2023
Next Scheduled EDR Contact: 10/02/2023
Data Release Frequency: Varies

UIC: Underground Injection Control Listing

A list of UIC registration data and their locations

Date of Government Version: 02/13/2023
Date Data Arrived at EDR: 02/15/2023
Date Made Active in Reports: 05/11/2023
Number of Days to Update: 85

Source: Department of Environmental Protection
Telephone: 617-566-1172
Last EDR Contact: 05/03/2023
Next Scheduled EDR Contact: 08/21/2023
Data Release Frequency: Varies

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 06/27/2023
Next Scheduled EDR Contact: 10/16/2023
Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System

Date of Government Version: 08/23/2022
Date Data Arrived at EDR: 11/22/2022
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 98

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

PFAS TRIS: List of PFAS Added to the TRI
Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) immediately added certain per- and polyfluoroalkyl substances (PFAS) to the list of chemicals covered by the Toxics Release Inventory (TRI) under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) and provided a framework for additional PFAS to be added to TRI on an annual basis.

Date of Government Version: 06/07/2023
Date Data Arrived at EDR: 06/08/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 1

Source: Environmental Protection Agency
Telephone: 202-566-0250
Last EDR Contact: 06/08/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PCS: Permit Compliance System
PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 06/27/2023
Next Scheduled EDR Contact: 10/16/2023
Data Release Frequency: No Update Planned

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Protection in Massachusetts.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/24/2013
Number of Days to Update: 176

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Protection in Massachusetts.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/24/2013
Number of Days to Update: 176

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/16/2022
Date Data Arrived at EDR: 11/16/2022
Date Made Active in Reports: 02/06/2023
Number of Days to Update: 82

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/11/2023
Next Scheduled EDR Contact: 08/21/2023
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 06/27/2023
Next Scheduled EDR Contact: 10/16/2023
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 10/29/2021
Date Made Active in Reports: 01/19/2022
Number of Days to Update: 82

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 04/27/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/06/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/18/2022
Number of Days to Update: 80

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/10/2022
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Annually

VT MANIFEST: Hazardous Waste Manifest Data
Hazardous waste manifest information.

Date of Government Version: 10/28/2019
Date Data Arrived at EDR: 10/29/2019
Date Made Active in Reports: 01/09/2020
Number of Days to Update: 72

Source: Department of Environmental Conservation
Telephone: 802-241-3443
Last EDR Contact: 04/06/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/01/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: MassDEP
Telephone: 617-292-5907

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

CAPE COD GATEWAY AIRPORT
480 BARNSTABLE ROAD
HYANNIS, MA 02601

TARGET PROPERTY COORDINATES

Latitude (North):	41.669965 - 41° 40' 11.87''
Longitude (West):	70.281853 - 70° 16' 54.67''
Universal Tranverse Mercator:	Zone 19
UTM X (Meters):	393289.2
UTM Y (Meters):	4613714.5
Elevation:	40 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	11730675 HYANNIS, MA
Version Date:	2018

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

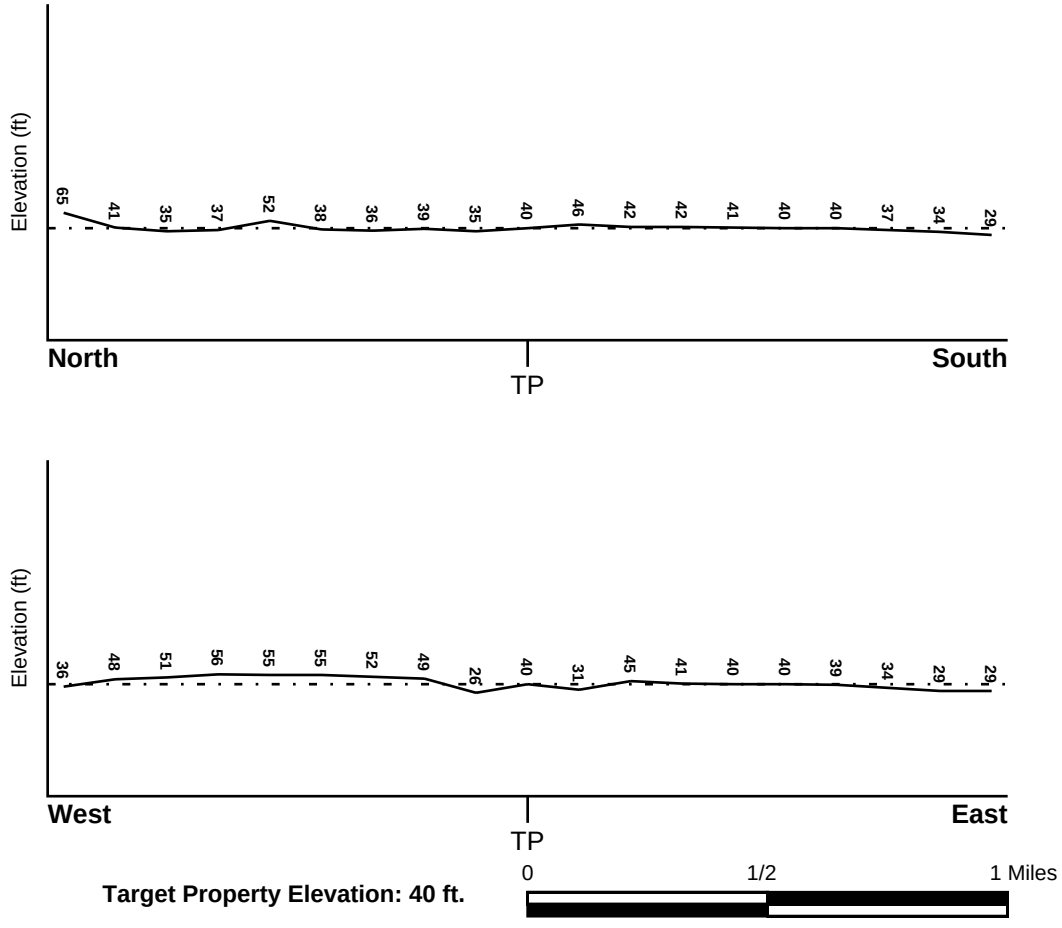
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General East

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 40 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
25001C0566J	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
25001C0567J	FEMA FIRM Flood data
25001C0568J	FEMA FIRM Flood data
25001C0569J	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
HYANNIS (DIGITAL)	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

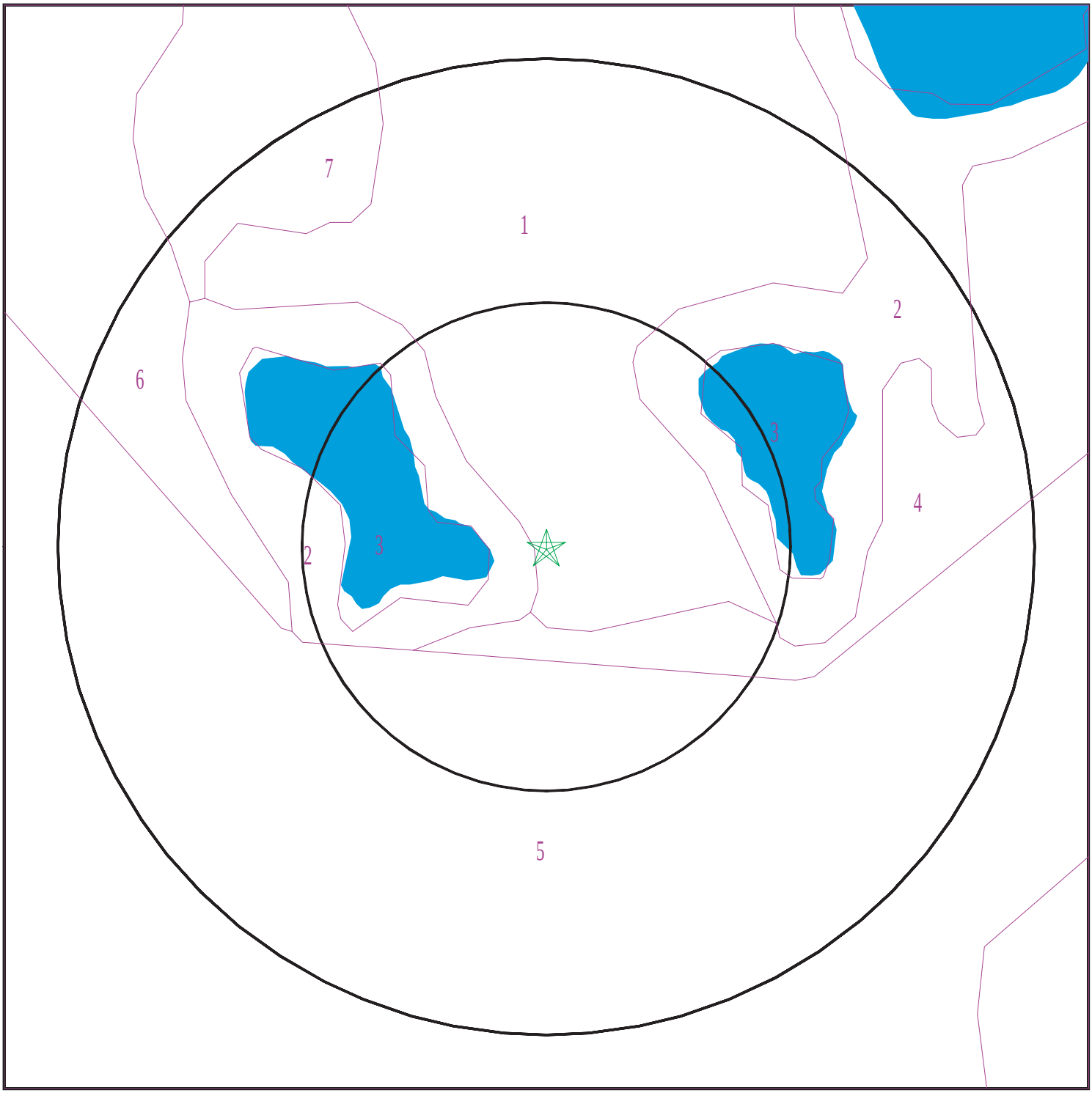
Era:	Cenozoic
System:	Quaternary
Series:	Pleistocene
Code:	Qp *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 7379392.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Cape Cod Gateway Airport	CLIENT:	GEI Consultants, Inc.
ADDRESS:	480 Barnstable Road Hyannis MA 02601	CONTACT:	Christopher M Ragnelli
LAT/LONG:	41.669965 / 70.281853	INQUIRY #:	7379392.2s
		DATE:	June 30, 2023 3:53 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Carver

Soil Surface Texture: loamy coarse sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	loamy coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6
2	7 inches	16 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6
3	16 inches	64 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6

Soil Map ID: 2

Soil Component Name: Carver

Soil Surface Texture: coarse sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6
2	7 inches	16 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6
3	16 inches	64 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6

Soil Map ID: 3

Soil Component Name: Water

Soil Surface Texture: water

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class:
Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	16 inches	64 inches	water	Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 4

Soil Component Name: Carver

Soil Surface Texture: loamy coarse sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	loamy coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6
2	7 inches	16 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6
3	16 inches	64 inches	coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 5.5 Min: 3.6

Soil Map ID: 5

Soil Component Name: Urban land

Soil Surface Texture: loamy coarse sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class:
Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

Soil Map ID: 6

Soil Component Name: Hinckley

Soil Surface Texture: sandy loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	sandy loam	Not reported	Not reported	Max: 705 Min: 141.14	Max: 6 Min: 3.6
2	1 inches	16 inches	gravelly sandy loam	Not reported	Not reported	Max: 705 Min: 141.14	Max: 6 Min: 3.6
3	16 inches	64 inches	stratified very gravelly coarse sand to gravelly coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 6 Min: 3.6

Soil Map ID: 7

Soil Component Name: Hinckley

Soil Surface Texture: sandy loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	sandy loam	Not reported	Not reported	Max: 705 Min: 141.14	Max: 6 Min: 3.6
2	1 inches	16 inches	gravelly sandy loam	Not reported	Not reported	Max: 705 Min: 141.14	Max: 6 Min: 3.6
3	16 inches	64 inches	stratified very gravelly coarse sand to gravelly coarse sand	Not reported	Not reported	Max: 705 Min: 141.14	Max: 6 Min: 3.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS40000457776	0 - 1/8 Mile NNE
2	USGS40000457786	1/8 - 1/4 Mile WNW
A4	USGS40000457796	1/8 - 1/4 Mile ENE
6	USGS40000457656	1/4 - 1/2 Mile SE
B8	USGS40000457886	1/4 - 1/2 Mile North
9	USGS40000457636	1/4 - 1/2 Mile SW
B10	USGS40000457895	1/4 - 1/2 Mile NNE
11	USGS40000457842	1/4 - 1/2 Mile WNW
C12	USGS40000457904	1/4 - 1/2 Mile NNE
14	USGS40000457882	1/4 - 1/2 Mile NE
15	USGS40000457635	1/4 - 1/2 Mile SSE
18	USGS40000457695	1/2 - 1 Mile ESE
D21	USGS40000457940	1/2 - 1 Mile North
D22	USGS40000457939	1/2 - 1 Mile North

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
23	USGS40000457769	1/2 - 1 Mile East
24	USGS40000457926	1/2 - 1 Mile NNE
25	USGS40000457907	1/2 - 1 Mile NE
28	USGS40000457696	1/2 - 1 Mile WSW
E29	USGS40000457941	1/2 - 1 Mile NW
F30	USGS40000458027	1/2 - 1 Mile North
F31	USGS40000458028	1/2 - 1 Mile North
G34	USGS40000458026	1/2 - 1 Mile NNE
36	USGS40000457942	1/2 - 1 Mile NW
G39	USGS40000458036	1/2 - 1 Mile NNE
I42	USGS40000457542	1/2 - 1 Mile SE
I43	USGS40000457543	1/2 - 1 Mile SE
44	USGS40000457491	1/2 - 1 Mile SSW
I45	USGS40000457541	1/2 - 1 Mile SE
46	USGS40000457927	1/2 - 1 Mile NW
47	USGS40000458098	1/2 - 1 Mile NNW
J50	USGS40000458037	1/2 - 1 Mile NNW
K52	USGS40000457849	1/2 - 1 Mile WNW
I53	USGS40000457534	1/2 - 1 Mile SE
K55	USGS40000457850	1/2 - 1 Mile WNW
56	USGS40000457770	1/2 - 1 Mile West
57	USGS40000457973	1/2 - 1 Mile NE
58	USGS40000458143	1/2 - 1 Mile North
L59	USGS40000457527	1/2 - 1 Mile SE
60	USGS40000457526	1/2 - 1 Mile SE
62	USGS40000458149	1/2 - 1 Mile NNE
M63	USGS40000457429	1/2 - 1 Mile South
M64	USGS40000457430	1/2 - 1 Mile South
65	USGS40000457832	1/2 - 1 Mile East
66	USGS40000457492	1/2 - 1 Mile SW
M67	USGS40000457412	1/2 - 1 Mile South
68	USGS40000457579	1/2 - 1 Mile ESE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A3	MA4020004	1/8 - 1/4 Mile ENE

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

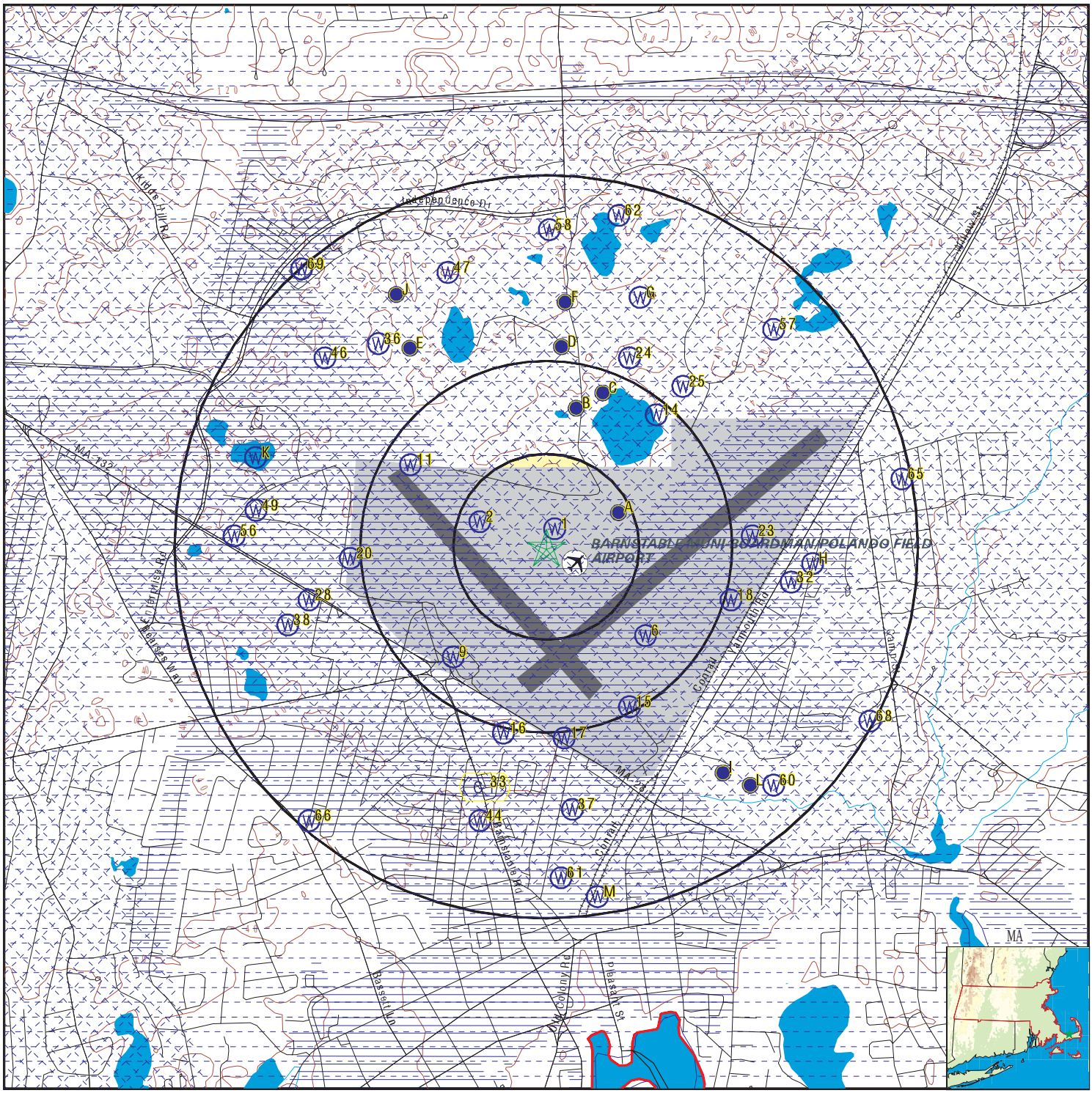
MAP ID	WELL ID	LOCATION FROM TP
A5	MA9000000001764	1/8 - 1/4 Mile ENE
B7	MA9000000002039	1/4 - 1/2 Mile NNE
C13	MA9000000000478	1/4 - 1/2 Mile NNE
16	MA9000000005550	1/2 - 1 Mile SSW
17	MA9000000004584	1/2 - 1 Mile South

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
D19	MA9000000001333	1/2 - 1 Mile North
20	MA9000000005057	1/2 - 1 Mile West
E26	MA9000000002935	1/2 - 1 Mile NW
F27	MA9000000003380	1/2 - 1 Mile North
32	MA9000000004513	1/2 - 1 Mile East
H35	MA9000000004884	1/2 - 1 Mile East
37	MA9000000004991	1/2 - 1 Mile South
38	MA9000000004340	1/2 - 1 Mile WSW
H40	MA9000000004293	1/2 - 1 Mile East
I41	MA9000000001745	1/2 - 1 Mile SE
J48	MA9000000002678	1/2 - 1 Mile NNW
49	MA9000000004885	1/2 - 1 Mile West
I51	MA9000000001534	1/2 - 1 Mile SE
L54	MA9000000000255	1/2 - 1 Mile SE
61	MA9000000004000	1/2 - 1 Mile South
69	MA9000000004715	1/2 - 1 Mile NW

PHYSICAL SETTING SOURCE MAP - 7379392.2s


BARNSTABLE MUNI-BOARDMAN/POLANDO FIELD AIRPORT
Independence Dr
Attucks Lane Rd
Bearses Way
Barnstable Rd
Phinneys Ln
Race Lane
Old Colony Rd
Basset Ln
Phillips Rd
Phillips Rd
Phillips Rd

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
NNE **FED USGS** **USGS40000457776**
0 - 1/8 Mile
Lower

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 299	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720229	Well Depth:	56
Well Depth Units:	ft	Well Hole Depth:	70
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1972-02-29
Feet below surface:	10.00	Feet to sea level:	Not Reported
Note:	Not Reported		

2
WNW **FED USGS** **USGS40000457786**
1/8 - 1/4 Mile
Higher

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 301	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720424	Well Depth:	56
Well Depth Units:	ft	Well Hole Depth:	63
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	17	Level reading date:	1977-04-01
Feet below surface:	6.23	Feet to sea level:	Not Reported
Note:	Not Reported		

Level reading date:	1977-03-17	Feet below surface:	6.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-12-02	Feet below surface:	7.93
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-10-29	Feet below surface:	7.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-09-29	Feet below surface:	7.49
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-08-24	Feet below surface:	6.64
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1976-07-27	Feet below surface:	6.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-06-30	Feet below surface:	5.42
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-26	Feet below surface:	4.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-04-28	Feet below surface:	4.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-03-24	Feet below surface:	3.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-25	Feet below surface:	3.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-30	Feet below surface:	3.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-12-16	Feet below surface:	5.44
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-25	Feet below surface:	5.72
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-05	Feet below surface:	6.24
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-10-02	Feet below surface:	6.43
Feet to sea level:	Not Reported	Note:	Not Reported

A3
ENE
1/8 - 1/4 Mile
Higher

FRDS PWS **MA4020004**

Epa region:	01	State:	MA
Pwsid:	MA4020004		
Pwsname:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Cityserved:	Not Reported	Stateserved:	MA
Zipserved:	Not Reported	Fipscounty:	25001
Status:	Active	Retpopsrvd:	35000
Pwssvcconn:	7103	Psource longname:	Groundwater
Pwstype:	CWS	Owner:	Local_Govt
Contact:	HENRICUS KEIJSER	Contactorgname:	HYANNIS WATER SYSTEM
Contactphone:	5087750063	Contactaddress1:	P.O. BOX 326
Contactaddress2:	Not Reported	Contactcity:	HYANNIS
Contactstate:	MA	Contactzip:	02601
Pwsactivitycode:	A		
Pwsid:	MA4020004	Facid:	25
Facname:	MAHER TREATMENT PLANT	Factype:	Treatment_plant
Facactivitycode:	A	Trtobjective:	iron removal
Trtprocess:	sequestration	Factypecode:	TP
Pwsid:	MA4020004	Facid:	25
Facname:	MAHER TREATMENT PLANT	Factype:	Treatment_plant
Facactivitycode:	A	Trtobjective:	organics removal
Trtprocess:	aeration, packed tower	Factypecode:	TP

Pwsid:	MA4020004	Facid:	25
Facname:	MAHER TREATMENT PLANT	Factype:	Treatment_plant
Facactivitycode:	A	Trtobjective:	corrosion control
Trtprocess:	ph adjustment	Factypecode:	TP

Pwsid:	MA4020004	Facid:	25
Facname:	MAHER TREATMENT PLANT	Factype:	Treatment_plant
Facactivitycode:	A	Trtobjective:	corrosion control
Trtprocess:	inhibitor, orthophosphate	Factypecode:	TP

Pwsid:	MA4020004	Facid:	25
Facname:	MAHER TREATMENT PLANT	Factype:	Treatment_plant
Facactivitycode:	A	Trtobjective:	disinfection
Trtprocess:	hypochlorination, post	Factypecode:	TP

Pwsid:	MA4020004	Facid:	25
Facname:	MAHER TREATMENT PLANT	Factype:	Treatment_plant
Facactivitycode:	A	Trtobjective:	disinfection
Trtprocess:	not reported	Factypecode:	TP

Pwsid:	MA4020004	Facid:	26
Facname:	MARY DUNN TREATMENT PLANT	Factype:	Treatment_plant
Facactivitycode:	A	Trtobjective:	iron removal
Trtprocess:	sequestration	Factypecode:	TP

Pwsid:	MA4020004	Facid:	26
Facname:	MARY DUNN TREATMENT PLANT	Factype:	Treatment_plant
Facactivitycode:	A	Trtobjective:	corrosion control
Trtprocess:	ph adjustment	Factypecode:	TP

Pwsid:	MA4020004	Facid:	26
Facname:	MARY DUNN TREATMENT PLANT	Factype:	Treatment_plant
Facactivitycode:	A	Trtobjective:	corrosion control
Trtprocess:	inhibitor, orthophosphate	Factypecode:	TP

Pwsid:	MA4020004	Facid:	26
Facname:	MARY DUNN TREATMENT PLANT	Factype:	Treatment_plant
Facactivitycode:	A	Trtobjective:	disinfection
Trtprocess:	hypochlorination, post	Factypecode:	TP

Pwsid:	MA4020004	Facid:	30
Facname:	AIRPORT WELL #1 PUMPING STATION		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	iron removal	Trtprocess:	sequestration
Factypecode:	TP		

Pwsid:	MA4020004	Facid:	32
Facname:	HYANNISPORT TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	iron removal	Trtprocess:	sequestration
Factypecode:	TP		

Pwsid:	MA4020004	Facid:	32
Facname:	HYANNISPORT TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	corrosion control	Trtprocess:	ph adjustment
Factypecode:	TP		

Pwsid:	MA4020004	Facid:	32
Facname:	HYANNISPORT TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	corrosion control	Trtprocess:	inhibitor, orthophosphate

Factypecode:	TP		
Pwsid:	MA4020004	Facid:	32
Facname:	HYANNISPORT TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	hypochlorination, post
Factypecode:	TP		
Pwsid:	MA4020004	Facid:	32
Facname:	HYANNISPORT TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	not reported
Factypecode:	TP		
Pwsid:	MA4020004	Facid:	33
Facname:	STRAIGHTWAY TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	iron removal	Trtprocess:	sequestration
Factypecode:	TP		
Pwsid:	MA4020004	Facid:	33
Facname:	STRAIGHTWAY TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	corrosion control	Trtprocess:	ph adjustment
Factypecode:	TP		
Pwsid:	MA4020004	Facid:	33
Facname:	STRAIGHTWAY TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	corrosion control	Trtprocess:	inhibitor, orthophosphate
Factypecode:	TP		
Pwsid:	MA4020004	Facid:	33
Facname:	STRAIGHTWAY TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	hypochlorination, post
Factypecode:	TP		
Pwsid:	MA4020004	Facid:	33
Facname:	STRAIGHTWAY TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	not reported
Factypecode:	TP		
PWS ID:	MA4020004	PWS name:	BARNSTABLE WATER COMPANY
Address:	Not Reported	Care of:	47 OLD YARMOUTH ROAD
City:	BARNSTABLE	State:	MA
Zip:	026300000	Owner:	BARNSTABLE WATER COMPANY
Source code:	Ground water	Population:	34000
PWS ID:	MA4020004	PWS type:	Mailing
PWS name:	BARNSTABLE WATER COMPANY	PWS address:	P O BOX 326
PWS address:	BARNSTABLE	PWS city:	HYANNIS
PWS state:	MA	PWS zip:	026010000
PWS name:	HYANNIS WATER SYSTEM	PWS type code:	C
Retail population served:	34000	Contact:	HENRICUS C KEIJSER
Contact address:	PO BOX 326	Contact address:	HYANNIS
Contact city:	MA	Contact state:	02
Contact zip:	5087750063	Contact telephone:	Not Reported
County:	BARNSTABLE	Source:	Ground water
Treatment Objective:	CORROSION CONTROL	Process:	INHIBITOR, HEXAMETAPHOSPHATE

Population:	34000		
County:	BARNSTABLE	Source:	Ground water
Treatment Objective:	DISINFECTION	Process:	HYPOCHLORINATION, POST
Population:	34000		
County:	BARNSTABLE	Source:	Ground water
Treatment Objective:	ORGANICS REMOVAL	Process:	AERATION, PACKED TOWER
Population:	34000		
PWS ID:	MA4020004	Activity status:	Active
Date system activated:	9003	Date system deactivated:	Not Reported
Retail population:	00034000	System name:	BARNSTABLE WATER COMPANY
System address:	47 OLD YARMOUTH ROAD	System address:	BARNSTABLE
System city:	HYANNIS	System state:	MA
System zip:	026010000		
Population served:	10,001 - 50,000 Persons	Treatment:	Mixed (treated and untreated)
Latitude:	413910	Longitude:	0701622
Latitude:	414017	Longitude:	0701644
Latitude:	414046	Longitude:	0701653
Latitude:	414040	Longitude:	0701655
Latitude:	413910	Longitude:	0701625
Latitude:	413826	Longitude:	0701827
Latitude:	414033	Longitude:	0701646
Latitude:	414030	Longitude:	0701650
Latitude:	413820	Longitude:	0701827
Latitude:	413909	Longitude:	0701618
Latitude:	413843	Longitude:	0701837
State:	MA	Latitude degrees:	41
Latitude minutes:	38	Latitude seconds:	20.0000
Longitude degrees:	70	Longitude minutes:	18
Longitude seconds:	27.0000		
State:	MA	Latitude degrees:	41
Latitude minutes:	38	Latitude seconds:	26.0000
Longitude degrees:	70	Longitude minutes:	18
Longitude seconds:	27.0000		
State:	MA	Latitude degrees:	41
Latitude minutes:	38	Latitude seconds:	43.0000
Longitude degrees:	70	Longitude minutes:	18
Longitude seconds:	37.0000		
State:	MA	Latitude degrees:	41
Latitude minutes:	39	Latitude seconds:	9.0000
Longitude degrees:	70	Longitude minutes:	16
Longitude seconds:	18.0000		
State:	MA	Latitude degrees:	41

Latitude minutes:	39	Latitude seconds:	10.0000
Longitude degrees:	70	Longitude minutes:	16
Longitude seconds:	22.0000		

State:	MA	Latitude degrees:	41
Latitude minutes:	39	Latitude seconds:	10.0000
Longitude degrees:	70	Longitude minutes:	16
Longitude seconds:	25.0000		

State:	MA	Latitude degrees:	41
Latitude minutes:	40	Latitude seconds:	17.0000
Longitude degrees:	70	Longitude minutes:	16
Longitude seconds:	44.0000		

State:	MA	Latitude degrees:	41
Latitude minutes:	40	Latitude seconds:	30.0000
Longitude degrees:	70	Longitude minutes:	16
Longitude seconds:	50.0000		

State:	MA	Latitude degrees:	41
Latitude minutes:	40	Latitude seconds:	33.0000
Longitude degrees:	70	Longitude minutes:	16
Longitude seconds:	46.0000		

State:	MA	Latitude degrees:	41
Latitude minutes:	40	Latitude seconds:	40.0000
Longitude degrees:	70	Longitude minutes:	16
Longitude seconds:	55.0000		

State:	MA	Latitude degrees:	41
Latitude minutes:	40	Latitude seconds:	46.0000
Longitude degrees:	70	Longitude minutes:	16
Longitude seconds:	53.0000		

Violation id:	03V0001	Orig code:	S
State:	MA	Violation Year:	2002
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	21	Violation name:	MCL, Acute (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	12/01/2002
Cmp edt:	12/31/2002		

Violation id:	03V0002	Orig code:	S
State:	MA	Violation Year:	2002
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	22	Violation name:	MCL, Monthly (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	12/01/2002
Cmp edt:	12/31/2002		

Violation id:	1	Orig code:	S
State:	MA	Violation Year:	2006
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	26	Violation name:	Monitoring, Repeat Minor (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	12/01/2006
Cmp edt:	12/31/2006		

Violation id:	10	Orig code:	S

State: MA
Contamination code: 2456
Violation code: 27
Rule code: 210
Violation measur: Not Reported
State mcl: Not Reported
Cmp edt: 09/30/2009
Violation Year: 2009
Contamination Name: Total Haloacetic Acids (HAA5)
Violation name: Monitoring and Reporting (DBP)
Rule name: St1 DBP
Unit of measure: Not Reported
Cmp bdt: 07/01/2009

Violation id: 11
State: MA
Contamination code: 5000
Violation code: 52
Rule code: 350
Violation measur: Not Reported
State mcl: Not Reported
Cmp edt: Not Reported
Orig code: S
Violation Year: 2009
Contamination Name: Lead and Copper Rule
Violation name: Follow-up Or Routine LCR Tap M/R
Rule name: LCR
Unit of measure: Not Reported
Cmp bdt: 10/01/2009

Violation id: 12
State: MA
Contamination code: 1040
Violation code: 03
Rule code: 331
Violation measur: Not Reported
State mcl: Not Reported
Cmp edt: 09/30/2009
Orig code: S
Violation Year: 2009
Contamination Name: Nitrate
Violation name: Monitoring, Regular
Rule name: Nitrates
Unit of measure: Not Reported
Cmp bdt: 07/01/2009

Violation id: 13
State: MA
Contamination code: 1039
Violation code: 03
Rule code: 500
Violation measur: Not Reported
State mcl: Not Reported
Cmp edt: 09/30/2009
Orig code: S
Violation Year: 2009
Contamination Name: Perchlorate
Violation name: Monitoring, Regular
Rule name: Not Regulated
Unit of measure: Not Reported
Cmp bdt: 07/01/2009

Violation id: 14
State: MA
Contamination code: 2990
Violation code: 03
Rule code: 310
Violation measur: Not Reported
State mcl: Not Reported
Cmp edt: 09/30/2009
Orig code: S
Violation Year: 2009
Contamination Name: Benzene
Violation name: Monitoring, Regular
Rule name: VOC
Unit of measure: Not Reported
Cmp bdt: 07/01/2009

Violation id: 15
State: MA
Contamination code: 2982
Violation code: 03
Rule code: 310
Violation measur: Not Reported
State mcl: Not Reported
Cmp edt: 09/30/2009
Orig code: S
Violation Year: 2009
Contamination Name: Carbon tetrachloride
Violation name: Monitoring, Regular
Rule name: VOC
Unit of measure: Not Reported
Cmp bdt: 07/01/2009

Violation id: 16
State: MA
Contamination code: 2977
Violation code: 03
Rule code: 310
Violation measur: Not Reported
State mcl: Not Reported
Cmp edt: 09/30/2009
Orig code: S
Violation Year: 2009
Contamination Name: 1,1-Dichloroethylene
Violation name: Monitoring, Regular
Rule name: VOC
Unit of measure: Not Reported
Cmp bdt: 07/01/2009

Violation id:	17	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2980	Contamination Name:	1,2-Dichloroethane
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	18	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2984	Contamination Name:	Trichloroethylene
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	19	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2981	Contamination Name:	1,1,1-Trichloroethane
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	2	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	21	Violation name:	MCL, Acute (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	10/01/2007
Cmp edt:	10/31/2007		

Violation id:	20	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2976	Contamination Name:	Vinyl chloride
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	21	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2989	Contamination Name:	CHLOROBENZENE
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	22	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2968	Contamination Name:	o-Dichlorobenzene
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	23	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2979	Contamination Name:	trans-1,2-Dichloroethylene
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	24	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2380	Contamination Name:	cis-1,2-Dichloroethylene
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	25	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2983	Contamination Name:	1,2-Dichloropropane
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	26	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2992	Contamination Name:	Ethylbenzene
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	27	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2996	Contamination Name:	Styrene
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	28	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2987	Contamination Name:	Tetrachloroethylene
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	29	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2991	Contamination Name:	Toluene
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	3	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	7500	Contamination Name:	Public Notice
Violation code:	75	Violation name:	PN Violation for NPDWR Violation
Rule code:	410	Rule name:	PN rule
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	10/01/2007
Cmp edt:	Not Reported		

Violation id:	30	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2969	Contamination Name:	p-Dichlorobenzene
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	31	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2955	Contamination Name:	Xylenes, Total
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	32	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2964	Contamination Name:	DICHLOROMETHANE
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	33	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2962	Contamination Name:	p-Xylene
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	500	Rule name:	Not Regulated
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	34	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2985	Contamination Name:	1,1,2-Trichloroethane
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	35	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2251	Contamination Name:	METHYL TERT-BUTYL ETHER
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	500	Rule name:	Not Regulated
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	36	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2378	Contamination Name:	1,2,4-Trichlorobenzene
Violation code:	03	Violation name:	Monitoring, Regular
Rule code:	310	Rule name:	VOC
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	39	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	22	Violation name:	MCL, Monthly (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	08/01/2009
Cmp edt:	08/31/2009		

Violation id:	4	Orig code:	S
State:	MA	Violation Year:	2007
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	21	Violation name:	MCL, Acute (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	11/01/2007
Cmp edt:	11/30/2007		

Violation id:	40	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	25	Violation name:	Monitoring, Repeat Major (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	08/01/2009
Cmp edt:	08/31/2009		

Violation id:	41	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	25	Violation name:	Monitoring, Repeat Major (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	09/01/2009
Cmp edt:	09/30/2009		

Violation id:	46	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	26	Violation name:	Monitoring, Repeat Minor (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	08/01/2009
Cmp edt:	08/31/2009		

Violation id:	47	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	05	Violation name:	Notification, State
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported		
Unit of measure:	Not Reported	State mcl:	Not Reported
Cmp bdt:	08/01/2009	Cmp edt:	08/31/2009

Violation id:	8	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	24	Violation name:	Monitoring, Routine Minor (TCR)
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	02/01/2009
Cmp edt:	02/28/2009		

Violation id:	9	Orig code:	S
State:	MA	Violation Year:	2009
Contamination code:	2950	Contamination Name:	TTHM
Violation code:	27	Violation name:	Monitoring and Reporting (DBP)
Rule code:	210	Rule name:	St1 DBP
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2009
Cmp edt:	09/30/2009		

Violation id:	99V0002	Orig code:	S
State:	MA	Violation Year:	1998
Contamination code:	5000	Contamination Name:	Lead and Copper Rule
Violation code:	51	Violation name:	Initial Tap Sampling for Pb and Cu
Rule code:	350	Rule name:	LCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/1998
Cmp edt:	Not Reported		

Violation ID:	03V0001	Orig Code:	S
Enforcemnt FY:	2003	Enforcement Action:	02/19/2003
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		

Violation ID:	03V0002	Orig Code:	S
Enforcemnt FY:	2003	Enforcement Action:	02/19/2003
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		

Violation ID:	1	Orig Code:	S
Enforcemnt FY:	2007	Enforcement Action:	05/16/2007
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving

Violation ID:	1	Orig Code:	S
Enforcemnt FY:	2007	Enforcement Action:	05/16/2007
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		

Violation ID:	10	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	11/24/2009
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		

Violation ID:	11	Orig Code:	S
Enforcemnt FY:	2011	Enforcement Action:	10/10/2010
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving

Violation ID:	11	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	11/18/2009
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		

Violation ID:	12	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	12/02/2009

Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 13 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 12/02/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 14 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 12/02/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 15 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 12/02/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 16 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 12/02/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 17 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 12/02/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 18 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 12/02/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 19 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 12/02/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 2 Orig Code: S
Enforcemnt FY: 2008 Enforcement Action: 11/21/2007
Enforcement Detail: St Compliance achieved Enforcement Category: Resolving

Violation ID: 2 Orig Code: S
Enforcemnt FY: 2008 Enforcement Action: 11/15/2007
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 20 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 12/02/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 21 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 12/02/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 22 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 12/02/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID:	23	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	12/02/2009
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	24	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	12/02/2009
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	25	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	12/02/2009
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	26	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	12/02/2009
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	27	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	12/02/2009
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	28	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	12/02/2009
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	29	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	12/02/2009
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	3	Orig Code:	S
Enforcemnt FY:	2008	Enforcement Action:	11/21/2007
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving
Violation ID:	3	Orig Code:	S
Enforcemnt FY:	2008	Enforcement Action:	11/15/2007
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	30	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	12/02/2009
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	31	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	12/02/2009
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	32	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	12/02/2009
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		
Violation ID:	33	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	12/02/2009
Enforcement Detail:	St AO (w/o penalty) issued		

Enforcement Category: Formal

Violation ID: 34 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 12/02/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 35 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 12/02/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 36 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 12/02/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 39 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 03/30/2010
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 4 Orig Code: S
Enforcemnt FY: 2008 Enforcement Action: 11/21/2007
Enforcement Detail: St Compliance achieved Enforcement Category: Resolving

Violation ID: 4 Orig Code: S
Enforcemnt FY: 2008 Enforcement Action: 11/15/2007
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 40 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 03/30/2010
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 41 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 03/30/2010
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 46 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 03/30/2010
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 47 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 03/30/2010
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 8 Orig Code: S
Enforcemnt FY: 2009 Enforcement Action: 09/09/2009
Enforcement Detail: St Compliance achieved Enforcement Category: Resolving

Violation ID: 8 Orig Code: S
Enforcemnt FY: 2009 Enforcement Action: 09/09/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 9 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 11/24/2009

Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 99V0002 Orig Code: S
Enforcemnt FY: 2000 Enforcement Action: 08/23/2000
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Formal

Violation ID: 99V0002 Orig Code: S
Enforcemnt FY: 2001 Enforcement Action: 10/05/2000
Enforcement Detail: St Compliance achieved Enforcement Category: Resolving

Violation ID: Not Reported Orig Code: S
Enforcemnt FY: 2003 Enforcement Action: 09/26/2003
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Not Reported

Violation ID: Not Reported Orig Code: S
Enforcemnt FY: 2009 Enforcement Action: 09/16/2009
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Not Reported

Violation ID: Not Reported Orig Code: S
Enforcemnt FY: 2013 Enforcement Action: 11/20/2012
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Not Reported

Violation ID: Not Reported Orig Code: S
Enforcemnt FY: 2003 Enforcement Action: 08/11/2003
Enforcement Detail: St AO (w/o penalty) issued
Enforcement Category: Not Reported

Violation ID: Not Reported Orig Code: S
Enforcemnt FY: 2000 Enforcement Action: 08/23/2000
Enforcement Detail: St Compliance achieved Enforcement Category: Not Reported

PWS name: HYANNIS WATER SYSTEM Population served: 34000
PWS type code: C Violation ID: 03V0001
Contaminant: COLIFORM (TCR) Violation type: Max Contaminant Level, Acute (TCR)
Compliance start date: 12/1/2002 0:00:00 Compliance end date: 12/31/2002 0:00:00
Enforcement date: 2/19/2003 0:00:00 Enforcement action: State Formal NOV Issued
Violation measurement: 0

PWS name: HYANNIS WATER SYSTEM Population served: 34000
PWS type code: C Violation ID: 03V0002
Contaminant: COLIFORM (TCR)
Violation type: Max Contaminant Level, Monthly (TCR)
Compliance start date: 12/1/2002 0:00:00 Compliance end date: 12/31/2002 0:00:00
Enforcement date: 2/19/2003 0:00:00 Enforcement action: State Formal NOV Issued
Violation measurement: 0

PWS name: HYANNIS WATER SYSTEM Population served: 34000
PWS type code: C Violation ID: 1
Contaminant: COLIFORM (TCR) Violation type: Monitoring, Repeat Minor (TCR)
Compliance start date: 12/1/2006 0:00:00 Compliance end date: 12/31/2006 0:00:00
Enforcement date: 5/16/2007 0:00:00 Enforcement action: State Formal NOV Issued
Violation measurement: Not Reported

PWS name: HYANNIS WATER SYSTEM Population served: 34000
PWS type code: C Violation ID: 1
Contaminant: COLIFORM (TCR) Violation type: Monitoring, Repeat Minor (TCR)
Compliance start date: 12/1/2006 0:00:00 Compliance end date: 12/31/2006 0:00:00

Enforcement date:	5/16/2007 0:00:00	Enforcement action:	State Compliance Achieved
Violation measurement:	Not Reported		

PWS name:	HYANNIS WATER SYSTEM	Population served:	34000
PWS type code:	C	Violation ID:	2
Contaminant:	COLIFORM (TCR)	Violation type:	Max Contaminant Level, Acute (TCR)
Compliance start date:	10/1/2007 0:00:00	Compliance end date:	10/31/2007 0:00:00
Enforcement date:	11/15/2007 0:00:00	Enforcement action:	State BCA Signed
Violation measurement:	Not Reported		

PWS name:	HYANNIS WATER SYSTEM	Population served:	34000
PWS type code:	C	Violation ID:	3
Contaminant:	7500	Violation type:	75
Compliance start date:	10/1/2007 0:00:00	Compliance end date:	12/31/2025 0:00:00
Enforcement date:	11/15/2007 0:00:00	Enforcement action:	State BCA Signed
Violation measurement:	Not Reported		

PWS name:	HYANNIS WATER SYSTEM	Population served:	34000
PWS type code:	C	Violation ID:	4
Contaminant:	COLIFORM (TCR)	Violation type:	Max Contaminant Level, Acute (TCR)
Compliance start date:	11/1/2007 0:00:00	Compliance end date:	11/30/2007 0:00:00
Enforcement date:	11/15/2007 0:00:00	Enforcement action:	State BCA Signed
Violation measurement:	Not Reported		

PWS name:	HYANNIS WATER SYSTEM	Population served:	34000
PWS type code:	C	Violation ID:	99V0002
Contaminant:	LEAD & COPPER RULE	Violation type:	Initial Tap Sampling for Pb and Cu
Compliance start date:	7/1/1998 0:00:00	Compliance end date:	10/5/2000 0:00:00
Enforcement date:	10/5/2000 0:00:00	Enforcement action:	State Compliance Achieved
Violation measurement:	0		

PWS name:	HYANNIS WATER SYSTEM	Population served:	34000
PWS type code:	C	Violation ID:	99V0002
Contaminant:	LEAD & COPPER RULE	Violation type:	Initial Tap Sampling for Pb and Cu
Compliance start date:	7/1/1998 0:00:00	Compliance end date:	10/5/2000 0:00:00
Enforcement date:	8/23/2000 0:00:00	Enforcement action:	State Formal NOV Issued
Violation measurement:	0		

A4
ENE **FED USGS** **USGS40000457796**
1/8 - 1/4 Mile
Lower

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 300	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720307	Well Depth:	63
Well Depth Units:	ft	Well Hole Depth:	70
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	17	Level reading date:	1977-04-01
Feet below surface:	10.96	Feet to sea level:	Not Reported
Note:	Not Reported		

Level reading date:	1977-03-17	Feet below surface:	11.51

Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-12-02	Feet below surface:	12.86
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-10-29	Feet below surface:	12.73
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-09-29	Feet below surface:	12.91
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-08-24	Feet below surface:	11.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-07-27	Feet below surface:	11.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-06-30	Feet below surface:	10.22
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-26	Feet below surface:	9.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-04-28	Feet below surface:	8.56
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-03-24	Feet below surface:	8.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-25	Feet below surface:	8.22
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-30	Feet below surface:	8.44
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-12-16	Feet below surface:	10.02
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-25	Feet below surface:	10.49
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-05	Feet below surface:	11.04
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-10-02	Feet below surface:	11.77
Feet to sea level:	Not Reported	Note:	Not Reported

A5
ENE
1/8 - 1/4 Mile
Higher

MA WELLS **MA9000000001764**

PWS ID:	4020004	Site Name:	AIRPORT 1
Type:	Community Groundwater Well		
Facility Name:	Not Reported	SubBasin:	CAPE COD
Basemap:	DOQ	Accuracy Estimate (ft):	100
Feature Type:	PH	Location Method:	PHO
Primary Location Source:	AP_DOQ	Secondary Location Source:	Not Reported
Tertiary Location Source:	Not Reported		

Source ID:	4020004-10G		
PWS Name:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Source Name:	AIRPORT 1	PWS Status:	A
Source Status:	A	PWS Class:	COM
Source Availability:	ACTIVE		
Well Name:	AIRPORT 1		
Purveyor:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Basin:	CAPE COD	Region:	4

6
SE **FED USGS** **USGS40000457656**
1/4 - 1/2 Mile
Higher

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 378	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720504	Well Depth:	70
Well Depth Units:	ft	Well Hole Depth:	100
Well Hole Depth Units:	ft		
Ground water levels,Number of Measurements:	1	Level reading date:	1972-05-04
Feet below surface:	20.58	Feet to sea level:	Not Reported
Note:	Not Reported		

B7
NNE **MA WELLS** **MA9000000002039**
1/4 - 1/2 Mile
Lower

PWS ID:	4020004	Site Name:	MARY DUNN WELL 1
Type:	Community Groundwater Well		
Facility Name:	Not Reported	SubBasin:	CAPE COD
Basemap:	NA	Accuracy Estimate (ft):	100
Feature Type:	GW	Location Method:	GP_6
Primary Location Source:	SV	Secondary Location Source:	Not Reported
Tertiary Location Source:	Not Reported		
Source ID:	4020004-04G		
PWS Name:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Source Name:	MARY DUNN WELL 1	PWS Status:	A
Source Status:	A	PWS Class:	COM
Source Availability:	ACTIVE		
Well Name:	MARY DUNN WELL 1		
Purveyor:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Basin:	CAPE COD	Region:	4

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

B8
North **FED USGS** **USGS40000457886**
1/4 - 1/2 Mile
Lower

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 387	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19640406	Well Depth:	50.5
Well Depth Units:	ft	Well Hole Depth:	51
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1964-04-06
Feet below surface:	5.30	Feet to sea level:	Not Reported
Note:	Not Reported		

9
SW **FED USGS** **USGS40000457636**
1/4 - 1/2 Mile
Higher

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 448-0063	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Outwash	Aquifer Type:	Unconfined single aquifer
Construction Date:	19850916	Well Depth:	63
Well Depth Units:	ft	Well Hole Depth:	73
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1985-09-16
Feet below surface:	22.50	Feet to sea level:	Not Reported
Note:	Not Reported		

B10
NNE **FED USGS** **USGS40000457895**
1/4 - 1/2 Mile
Lower

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 347	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19740410	Well Depth:	54

Well Depth Units:	ft	Well Hole Depth:	74
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1974-04-10
Feet below surface:	23.60	Feet to sea level:	Not Reported
Note:	Not Reported		

11
WNW **FED USGS** **USGS40000457842**
1/4 - 1/2 Mile
Higher

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 447-0055	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Outwash	Aquifer Type:	Unconfined single aquifer
Construction Date:	19850913	Well Depth:	55
Well Depth Units:	ft	Well Hole Depth:	65
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1985-09-13
Feet below surface:	26.60	Feet to sea level:	Not Reported
Note:	Not Reported		

C12
NNE **FED USGS** **USGS40000457904**
1/4 - 1/2 Mile
Lower

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 383	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19650517	Well Depth:	50
Well Depth Units:	ft	Well Hole Depth:	50
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1965-05-17
Feet below surface:	7.50	Feet to sea level:	Not Reported
Note:	Not Reported		

C13
NNE **MA WELLS** **MA9000000000478**
1/4 - 1/2 Mile
Lower

PWS ID:	4020004	Site Name:	MARY DUNN WELL 2
Type:	Community Groundwater Well		

Facility Name:	Not Reported	SubBasin:	CAPE COD
Basemap:	NA	Accuracy Estimate (ft):	100
Feature Type:	GW	Location Method:	GP_6
Primary Location Source:	SV	Secondary Location Source:	Not Reported
Tertiary Location Source:	Not Reported		
Source ID:	4020004-05G		
PWS Name:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Source Name:	MARY DUNN WELL 2	PWS Status:	A
Source Status:	A	PWS Class:	COM
Source Availability:	ACTIVE		
Well Name:	MARY DUNN WELL 2		
Purveyor:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Basin:	CAPE COD	Region:	4

14
NE **FED USGS** **USGS40000457882**
1/4 - 1/2 Mile
Lower

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 413	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720207	Well Depth:	56
Well Depth Units:	ft	Well Hole Depth:	70
Well Hole Depth Units:	ft		
Ground water levels,Number of Measurements:	1	Level reading date:	1972-02-07
Feet below surface:	4.00	Feet to sea level:	Not Reported
Note:	Not Reported		

15
SSE **FED USGS** **USGS40000457635**
1/4 - 1/2 Mile
Higher

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 230 BARNSTABLE, MA		
Type:	Well	Description:	Not Reported
HUC:	01090002	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported		
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Outwash	Aquifer Type:	Unconfined single aquifer
Construction Date:	19570923	Well Depth:	35.8
Well Depth Units:	ft	Well Hole Depth:	43
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1109	Level reading date:	2004-12-23
Feet below surface:	24.53	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	2004-11-26	Feet below surface:	25.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-10-28	Feet below surface:	24.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-10-04	Feet below surface:	24.91
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-08-26	Feet below surface:	24.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-07-29	Feet below surface:	24.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-06-24	Feet below surface:	23.38
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-05-24	Feet below surface:	23.17
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-04-27	Feet below surface:	23.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-03-23	Feet below surface:	23.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-03-05	Feet below surface:	23.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2004-01-21	Feet below surface:	23.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-12-24	Feet below surface:	22.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-11-24	Feet below surface:	24.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-10-27	Feet below surface:	24.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-09-30	Feet below surface:	24.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-08-22	Feet below surface:	22.02
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-07-29	Feet below surface:	22.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-06-24	Feet below surface:	22.23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-05-27	Feet below surface:	22.34
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-04-23	Feet below surface:	22.28

Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-03-24	Feet below surface:	22.26
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-02-25	Feet below surface:	23.36
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2003-01-28	Feet below surface:	24.14
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-12-26	Feet below surface:	24.85
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-11-26	Feet below surface:	25.56
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-10-24	Feet below surface:	26.33
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-08-28	Feet below surface:	26.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-07-25	Feet below surface:	25.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-06-21	Feet below surface:	24.39
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-05-23	Feet below surface:	24.12
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-04-26	Feet below surface:	25.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-03-25	Feet below surface:	25.89
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-02-26	Feet below surface:	26.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2002-01-25	Feet below surface:	25.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-12-20	Feet below surface:	26.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-11-20	Feet below surface:	26.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-10-23	Feet below surface:	25.64
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-09-21	Feet below surface:	25.18
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-08-21	Feet below surface:	24.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-07-20	Feet below surface:	24.37
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	2001-06-22	Feet below surface:	23.99
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-05-25	Feet below surface:	23.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-04-24	Feet below surface:	23.37
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-03-28	Feet below surface:	24.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-02-26	Feet below surface:	25.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2001-02-01	Feet below surface:	25.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-12-21	Feet below surface:	25.73
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-11-21	Feet below surface:	25.73
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-10-25	Feet below surface:	25.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-09-27	Feet below surface:	25.53
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-08-25	Feet below surface:	25.01
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-07-21	Feet below surface:	24.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-06-23	Feet below surface:	24.21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-05-30	Feet below surface:	23.79
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-04-24	Feet below surface:	23.37
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-04-21	Feet below surface:	24.26
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-03-24	Feet below surface:	24.51
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-02-22	Feet below surface:	25.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	2000-01-26	Feet below surface:	25.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-12-21	Feet below surface:	24.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-11-19	Feet below surface:	25.04
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1999-10-22	Feet below surface:	25.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-09-24	Feet below surface:	25.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-08-27	Feet below surface:	25.23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-07-21	Feet below surface:	24.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-06-22	Feet below surface:	23.85
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-05-21	Feet below surface:	23.46
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-04-20	Feet below surface:	23.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-03-23	Feet below surface:	23.14
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-02-23	Feet below surface:	24.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1999-01-21	Feet below surface:	24.46
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1998-12-22	Feet below surface:	24.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1998-11-24	Feet below surface:	23.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1998-10-20	Feet below surface:	23.44
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1998-09-25	Feet below surface:	23.21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1998-08-21	Feet below surface:	22.81
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1998-07-23	Feet below surface:	21.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1998-06-23	Feet below surface:	21.41
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1998-05-20	Feet below surface:	20.93
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1998-04-28	Feet below surface:	20.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1998-03-24	Feet below surface:	20.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1998-02-20	Feet below surface:	21.86
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1998-01-22	Feet below surface:	23.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1997-12-19	Feet below surface:	23.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1997-11-20	Feet below surface:	23.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1997-10-21	Feet below surface:	24.23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1997-09-23	Feet below surface:	23.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1997-08-22	Feet below surface:	23.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1997-07-22	Feet below surface:	22.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1997-06-25	Feet below surface:	21.89
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1997-05-22	Feet below surface:	21.36
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1997-04-22	Feet below surface:	20.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1997-03-20	Feet below surface:	22.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1997-02-20	Feet below surface:	21.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1997-01-20	Feet below surface:	21.63
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1996-12-20	Feet below surface:	21.44
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1996-11-21	Feet below surface:	21.16
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1996-10-25	Feet below surface:	20.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1996-09-20	Feet below surface:	22.62
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1996-08-23	Feet below surface:	24.52
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1996-07-23	Feet below surface:	23.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1996-06-21	Feet below surface:	23.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1996-05-23	Feet below surface:	22.68
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1996-04-23	Feet below surface:	22.39
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1996-03-21	Feet below surface:	23.01
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1996-02-26	Feet below surface:	23.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1996-01-20	Feet below surface:	24.63
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1995-12-20	Feet below surface:	24.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1995-11-21	Feet below surface:	25.04
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1995-10-20	Feet below surface:	25.86
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1995-09-20	Feet below surface:	25.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1995-08-23	Feet below surface:	25.23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1995-07-20	Feet below surface:	24.59
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1995-06-23	Feet below surface:	24.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1995-05-25	Feet below surface:	24.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1995-04-20	Feet below surface:	24.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1995-03-22	Feet below surface:	24.17
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1995-02-23	Feet below surface:	24.26
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1995-01-20	Feet below surface:	24.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1994-12-21	Feet below surface:	24.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1994-11-21	Feet below surface:	24.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1994-10-20	Feet below surface:	24.47
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1994-09-20	Feet below surface:	23.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1994-08-24	Feet below surface:	23.58
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1994-07-21	Feet below surface:	23.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1994-06-20	Feet below surface:	22.36
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1994-05-20	Feet below surface:	21.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1994-04-20	Feet below surface:	21.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1994-03-20	Feet below surface:	22.36
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1994-02-21	Feet below surface:	23.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1994-01-24	Feet below surface:	23.28
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-12-23	Feet below surface:	24.28
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-11-20	Feet below surface:	25.45
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-10-22	Feet below surface:	25.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-09-21	Feet below surface:	25.28
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-08-25	Feet below surface:	25.01
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-07-21	Feet below surface:	23.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-06-23	Feet below surface:	23.22
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-05-23	Feet below surface:	22.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-04-21	Feet below surface:	22.33
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-03-20	Feet below surface:	23.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-02-24	Feet below surface:	23.53
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1993-01-20	Feet below surface:	23.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-12-23	Feet below surface:	23.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-11-21	Feet below surface:	25.53
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1992-10-20	Feet below surface:	25.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-09-23	Feet below surface:	25.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-08-21	Feet below surface:	24.83
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-07-22	Feet below surface:	25.57
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-06-24	Feet below surface:	25.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-05-20	Feet below surface:	25.85
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-04-22	Feet below surface:	25.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-03-20	Feet below surface:	25.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-02-21	Feet below surface:	25.91
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1992-01-22	Feet below surface:	25.78
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1991-12-20	Feet below surface:	25.99
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1991-11-20	Feet below surface:	26.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1991-10-21	Feet below surface:	26.59
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1991-09-23	Feet below surface:	26.55
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1991-08-26	Feet below surface:	26.14
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1991-07-23	Feet below surface:	25.62
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1991-06-21	Feet below surface:	24.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1991-05-21	Feet below surface:	24.52
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1991-04-23	Feet below surface:	24.42
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1991-03-25	Feet below surface:	24.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1991-02-22	Feet below surface:	25.31
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1991-01-24	Feet below surface:	25.37
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1990-12-20	Feet below surface:	25.86
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1990-11-20	Feet below surface:	25.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1990-10-23	Feet below surface:	25.61
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1990-09-21	Feet below surface:	25.18
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1990-08-21	Feet below surface:	24.53
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1990-07-21	Feet below surface:	23.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1990-06-26	Feet below surface:	23.43
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1990-05-21	Feet below surface:	23.63
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1990-04-22	Feet below surface:	23.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1990-03-20	Feet below surface:	23.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1990-02-20	Feet below surface:	24.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1990-01-26	Feet below surface:	25.16
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1989-12-20	Feet below surface:	24.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1989-11-22	Feet below surface:	24.81
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1989-10-26	Feet below surface:	25.23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1989-09-21	Feet below surface:	25.29
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1989-08-22	Feet below surface:	24.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1989-07-21	Feet below surface:	24.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1989-06-20	Feet below surface:	24.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1989-05-24	Feet below surface:	23.92
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1989-04-21	Feet below surface:	25.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1989-03-20	Feet below surface:	25.43
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1989-02-21	Feet below surface:	25.31
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1989-01-20	Feet below surface:	25.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1988-12-20	Feet below surface:	24.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1988-11-22	Feet below surface:	26.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1988-10-25	Feet below surface:	26.28
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1988-09-20	Feet below surface:	26.16
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1988-08-26	Feet below surface:	25.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1988-07-26	Feet below surface:	25.11
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1988-06-20	Feet below surface:	24.45
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1988-05-25	Feet below surface:	23.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1988-04-27	Feet below surface:	23.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1988-03-25	Feet below surface:	23.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1988-02-22	Feet below surface:	23.38
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1988-01-21	Feet below surface:	24.18
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1987-12-22	Feet below surface:	23.99
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1987-11-24	Feet below surface:	23.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1987-10-27	Feet below surface:	24.04
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1987-09-28	Feet below surface:	23.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1987-08-21	Feet below surface:	23.81
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1987-07-20	Feet below surface:	22.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1987-06-22	Feet below surface:	21.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1987-05-20	Feet below surface:	20.51
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1987-04-21	Feet below surface:	20.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1987-03-24	Feet below surface:	22.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1987-01-22	Feet below surface:	22.68
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1986-12-22	Feet below surface:	23.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1986-11-24	Feet below surface:	25.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1986-10-21	Feet below surface:	25.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1986-09-22	Feet below surface:	25.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1986-08-27	Feet below surface:	25.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1986-07-24	Feet below surface:	24.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1986-06-26	Feet below surface:	24.53
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1986-05-26	Feet below surface:	24.17
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1986-04-24	Feet below surface:	23.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1986-03-21	Feet below surface:	23.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1986-02-23	Feet below surface:	23.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1986-01-21	Feet below surface:	24.56
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-12-23	Feet below surface:	24.43
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-11-20	Feet below surface:	24.39
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-10-21	Feet below surface:	24.06
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1985-09-23	Feet below surface:	23.55
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-08-21	Feet below surface:	24.83
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-07-25	Feet below surface:	24.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-06-26	Feet below surface:	24.42
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-05-22	Feet below surface:	24.28
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-04-25	Feet below surface:	24.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-03-20	Feet below surface:	24.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-02-20	Feet below surface:	24.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1985-01-25	Feet below surface:	24.14
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-12-24	Feet below surface:	23.79
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-11-28	Feet below surface:	23.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-10-22	Feet below surface:	23.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-09-24	Feet below surface:	22.45
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-08-21	Feet below surface:	21.31
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-07-20	Feet below surface:	21.44
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-06-22	Feet below surface:	21.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-05-22	Feet below surface:	21.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-04-23	Feet below surface:	22.12
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-03-23	Feet below surface:	22.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-02-21	Feet below surface:	23.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1984-01-24	Feet below surface:	23.53
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1983-12-26	Feet below surface:	22.67
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-11-22	Feet below surface:	24.55
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-10-21	Feet below surface:	24.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-09-26	Feet below surface:	24.55
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-08-23	Feet below surface:	23.79
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-07-21	Feet below surface:	22.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-06-24	Feet below surface:	22.23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-05-20	Feet below surface:	21.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-04-22	Feet below surface:	21.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-03-25	Feet below surface:	21.45
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-02-22	Feet below surface:	23.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1983-01-20	Feet below surface:	24.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-12-24	Feet below surface:	24.73
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-11-22	Feet below surface:	24.93
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-10-21	Feet below surface:	24.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-09-23	Feet below surface:	24.59
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-08-24	Feet below surface:	24.59
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-07-21	Feet below surface:	24.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-06-22	Feet below surface:	23.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-05-25	Feet below surface:	24.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-04-23	Feet below surface:	23.83
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1982-03-24	Feet below surface:	23.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-02-19	Feet below surface:	24.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1982-01-22	Feet below surface:	24.11
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-12-28	Feet below surface:	24.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-11-21	Feet below surface:	26.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-10-23	Feet below surface:	26.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-09-23	Feet below surface:	25.73
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-08-25	Feet below surface:	25.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-07-27	Feet below surface:	24.34
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-06-23	Feet below surface:	24.26
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-05-22	Feet below surface:	24.44
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-04-22	Feet below surface:	24.34
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-03-23	Feet below surface:	24.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1981-02-23	Feet below surface:	25.14
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-12-22	Feet below surface:	25.49
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-11-24	Feet below surface:	25.64
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-10-24	Feet below surface:	25.64
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-09-23	Feet below surface:	25.51
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-08-25	Feet below surface:	24.93
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-07-24	Feet below surface:	24.21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-06-23	Feet below surface:	23.65
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1980-05-24	Feet below surface:	23.31
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-04-24	Feet below surface:	23.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-03-25	Feet below surface:	23.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-02-23	Feet below surface:	23.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1980-01-24	Feet below surface:	23.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-12-22	Feet below surface:	23.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-11-24	Feet below surface:	23.67
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-10-25	Feet below surface:	24.01
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-09-25	Feet below surface:	23.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-08-28	Feet below surface:	23.37
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-07-27	Feet below surface:	22.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-06-27	Feet below surface:	21.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-05-25	Feet below surface:	21.79
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-04-27	Feet below surface:	21.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-03-28	Feet below surface:	22.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-02-27	Feet below surface:	22.43
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1979-01-24	Feet below surface:	22.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-12-28	Feet below surface:	23.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-11-29	Feet below surface:	24.12
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-10-29	Feet below surface:	23.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-09-28	Feet below surface:	23.23
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1978-07-27	Feet below surface:	22.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-06-29	Feet below surface:	22.18
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-05-26	Feet below surface:	22.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-03-28	Feet below surface:	22.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1978-01-27	Feet below surface:	21.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-12-27	Feet below surface:	23.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-11-28	Feet below surface:	23.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-09-28	Feet below surface:	24.29
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-06-23	Feet below surface:	22.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-05-27	Feet below surface:	23.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-04-26	Feet below surface:	22.68
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-03-28	Feet below surface:	23.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-03-25	Feet below surface:	23.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-03-20	Feet below surface:	23.85
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-03-15	Feet below surface:	23.91
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-03-10	Feet below surface:	24.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-03-05	Feet below surface:	23.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-02-28	Feet below surface:	23.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-02-25	Feet below surface:	23.99
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-02-23	Feet below surface:	24.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-02-20	Feet below surface:	24.16
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1977-02-15	Feet below surface:	24.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-02-10	Feet below surface:	24.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-02-05	Feet below surface:	24.24
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-01-31	Feet below surface:	24.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-01-25	Feet below surface:	24.17
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-01-20	Feet below surface:	24.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-01-15	Feet below surface:	24.29
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-01-10	Feet below surface:	25.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1977-01-05	Feet below surface:	25.18
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-12-31	Feet below surface:	25.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-12-25	Feet below surface:	25.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-12-20	Feet below surface:	25.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-12-15	Feet below surface:	25.12
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-12-10	Feet below surface:	25.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-12-05	Feet below surface:	25.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-11-30	Feet below surface:	25.04
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-11-25	Feet below surface:	24.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-11-20	Feet below surface:	24.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-11-15	Feet below surface:	24.91
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-11-10	Feet below surface:	24.88
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-11-05	Feet below surface:	24.87
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1976-10-31	Feet below surface:	24.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-10-25	Feet below surface:	24.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-10-20	Feet below surface:	24.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-10-15	Feet below surface:	24.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-10-10	Feet below surface:	24.81
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-10-05	Feet below surface:	24.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-09-30	Feet below surface:	24.72
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-09-25	Feet below surface:	24.62
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-09-20	Feet below surface:	24.53
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-09-15	Feet below surface:	24.45
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-09-10	Feet below surface:	24.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-09-05	Feet below surface:	24.26
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-08-31	Feet below surface:	24.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-08-25	Feet below surface:	24.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-08-20	Feet below surface:	24.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-08-15	Feet below surface:	23.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-08-10	Feet below surface:	23.89
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-08-05	Feet below surface:	23.88
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-07-31	Feet below surface:	23.83
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-07-25	Feet below surface:	23.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-07-20	Feet below surface:	23.58
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1976-07-15	Feet below surface:	23.51
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-07-10	Feet below surface:	23.48
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-07-05	Feet below surface:	23.37
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-06-30	Feet below surface:	23.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-06-25	Feet below surface:	23.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-06-20	Feet below surface:	23.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-06-15	Feet below surface:	22.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-06-10	Feet below surface:	22.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-06-05	Feet below surface:	22.78
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-31	Feet below surface:	22.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-25	Feet below surface:	22.55
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-20	Feet below surface:	22.45
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-15	Feet below surface:	22.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-10	Feet below surface:	22.26
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-05	Feet below surface:	22.18
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-04-30	Feet below surface:	22.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-04-25	Feet below surface:	21.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-04-20	Feet below surface:	21.86
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-04-15	Feet below surface:	21.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-04-10	Feet below surface:	21.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-04-05	Feet below surface:	21.51
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1976-03-31	Feet below surface:	21.49
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-03-25	Feet below surface:	21.52
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-03-20	Feet below surface:	21.61
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-03-15	Feet below surface:	21.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-03-10	Feet below surface:	21.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-03-05	Feet below surface:	21.57
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-29	Feet below surface:	21.47
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-25	Feet below surface:	21.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-20	Feet below surface:	21.24
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-15	Feet below surface:	21.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-10	Feet below surface:	21.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-05	Feet below surface:	21.26
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-31	Feet below surface:	21.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-25	Feet below surface:	21.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-20	Feet below surface:	21.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-15	Feet below surface:	21.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-10	Feet below surface:	22.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-05	Feet below surface:	22.24
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-12-31	Feet below surface:	22.47
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-12-25	Feet below surface:	22.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-12-20	Feet below surface:	22.74
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1975-12-15	Feet below surface:	22.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-12-10	Feet below surface:	22.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-12-05	Feet below surface:	23.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-30	Feet below surface:	23.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-25	Feet below surface:	23.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-20	Feet below surface:	23.42
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-15	Feet below surface:	23.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-10	Feet below surface:	23.64
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-05	Feet below surface:	23.64
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-10-31	Feet below surface:	23.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-10-25	Feet below surface:	23.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-10-20	Feet below surface:	23.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-10-15	Feet below surface:	23.83
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-10-10	Feet below surface:	23.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-10-05	Feet below surface:	23.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-09-30	Feet below surface:	24.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-09-25	Feet below surface:	24.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-09-20	Feet below surface:	24.55
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-09-15	Feet below surface:	24.52
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-09-10	Feet below surface:	24.47
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-09-05	Feet below surface:	24.41
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1975-08-31	Feet below surface:	24.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-08-25	Feet below surface:	24.37
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-08-20	Feet below surface:	24.33
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-08-15	Feet below surface:	24.26
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-08-10	Feet below surface:	24.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-08-05	Feet below surface:	24.34
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-07-31	Feet below surface:	24.21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-07-25	Feet below surface:	24.11
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-07-20	Feet below surface:	23.99
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-07-15	Feet below surface:	23.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-07-10	Feet below surface:	23.86
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-07-05	Feet below surface:	23.79
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-06-30	Feet below surface:	23.72
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-06-25	Feet below surface:	23.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-06-20	Feet below surface:	23.61
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-06-15	Feet below surface:	23.61
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-06-10	Feet below surface:	23.59
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-06-05	Feet below surface:	23.54
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-05-31	Feet below surface:	23.45
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-05-25	Feet below surface:	23.36
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-05-20	Feet below surface:	23.28
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1975-05-15	Feet below surface:	23.24
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-05-10	Feet below surface:	23.16
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-05-05	Feet below surface:	23.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-04-30	Feet below surface:	23.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-04-25	Feet below surface:	23.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-04-20	Feet below surface:	23.11
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-04-15	Feet below surface:	23.18
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-04-10	Feet below surface:	23.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-04-05	Feet below surface:	23.31
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-03-31	Feet below surface:	23.33
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-03-25	Feet below surface:	23.34
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-03-20	Feet below surface:	23.28
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-03-15	Feet below surface:	23.29
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-03-10	Feet below surface:	23.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-03-05	Feet below surface:	23.42
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-02-28	Feet below surface:	23.56
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-02-25	Feet below surface:	23.63
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-02-20	Feet below surface:	23.64
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-02-15	Feet below surface:	23.67
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-02-10	Feet below surface:	23.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-02-05	Feet below surface:	23.78
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1975-01-31	Feet below surface:	23.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-01-25	Feet below surface:	24.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-01-20	Feet below surface:	24.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-01-15	Feet below surface:	24.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-01-10	Feet below surface:	24.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-01-05	Feet below surface:	25.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-12-31	Feet below surface:	25.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-12-25	Feet below surface:	25.02
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-12-20	Feet below surface:	24.99
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-12-15	Feet below surface:	25.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-12-10	Feet below surface:	24.99
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-12-05	Feet below surface:	24.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-11-30	Feet below surface:	24.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-11-25	Feet below surface:	24.89
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-11-20	Feet below surface:	24.85
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-11-15	Feet below surface:	24.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-11-10	Feet below surface:	24.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-11-05	Feet below surface:	24.67
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-10-31	Feet below surface:	24.61
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-10-25	Feet below surface:	24.51
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-10-20	Feet below surface:	24.45
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1974-10-15	Feet below surface:	24.43
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-10-10	Feet below surface:	24.38
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-10-05	Feet below surface:	24.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-09-30	Feet below surface:	24.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-09-25	Feet below surface:	24.22
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-09-20	Feet below surface:	24.14
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-09-15	Feet below surface:	24.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-09-10	Feet below surface:	23.99
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-09-05	Feet below surface:	23.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-08-31	Feet below surface:	23.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-08-25	Feet below surface:	23.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-08-20	Feet below surface:	23.64
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-08-15	Feet below surface:	23.52
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-08-10	Feet below surface:	23.42
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-08-05	Feet below surface:	23.31
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-07-31	Feet below surface:	23.17
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-07-25	Feet below surface:	22.99
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-07-20	Feet below surface:	22.85
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-07-15	Feet below surface:	22.73
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-07-10	Feet below surface:	22.62
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-07-05	Feet below surface:	22.54
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1974-06-30	Feet below surface:	22.48
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-06-25	Feet below surface:	22.44
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-06-20	Feet below surface:	22.38
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-06-15	Feet below surface:	22.34
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-06-10	Feet below surface:	22.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-06-05	Feet below surface:	22.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-05-31	Feet below surface:	22.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-05-25	Feet below surface:	22.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-05-20	Feet below surface:	22.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-05-15	Feet below surface:	22.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-05-10	Feet below surface:	22.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-05-05	Feet below surface:	21.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-04-30	Feet below surface:	21.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-04-25	Feet below surface:	21.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-04-20	Feet below surface:	21.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-04-15	Feet below surface:	21.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-04-10	Feet below surface:	22.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-04-05	Feet below surface:	22.16
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-03-31	Feet below surface:	22.02
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-03-25	Feet below surface:	22.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-03-20	Feet below surface:	21.97
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1974-03-15	Feet below surface:	21.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-03-10	Feet below surface:	21.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-03-05	Feet below surface:	21.81
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-02-28	Feet below surface:	21.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-02-25	Feet below surface:	21.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-02-20	Feet below surface:	21.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-02-15	Feet below surface:	21.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-02-10	Feet below surface:	21.72
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-02-05	Feet below surface:	21.68
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-01-31	Feet below surface:	21.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-01-25	Feet below surface:	22.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-01-20	Feet below surface:	22.21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-01-15	Feet below surface:	22.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-01-10	Feet below surface:	22.16
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1974-01-05	Feet below surface:	22.12
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-12-31	Feet below surface:	22.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-12-25	Feet below surface:	22.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-12-20	Feet below surface:	22.67
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-12-15	Feet below surface:	23.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-12-10	Feet below surface:	23.17
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-12-05	Feet below surface:	23.18
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1973-11-30	Feet below surface:	23.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-11-25	Feet below surface:	23.16
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-11-20	Feet below surface:	23.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-11-15	Feet below surface:	23.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-11-10	Feet below surface:	22.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-11-05	Feet below surface:	22.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-10-31	Feet below surface:	22.79
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-10-25	Feet below surface:	22.78
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-10-20	Feet below surface:	22.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-10-15	Feet below surface:	22.56
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-10-10	Feet below surface:	22.52
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-10-05	Feet below surface:	22.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-09-30	Feet below surface:	22.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-09-25	Feet below surface:	22.73
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-09-20	Feet below surface:	22.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-09-15	Feet below surface:	22.59
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-09-10	Feet below surface:	22.48
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-09-05	Feet below surface:	22.37
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-08-31	Feet below surface:	22.24
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-08-25	Feet below surface:	22.12
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-08-20	Feet below surface:	22.05
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1973-08-15	Feet below surface:	22.01
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-08-10	Feet below surface:	21.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-08-05	Feet below surface:	21.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-07-31	Feet below surface:	21.73
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-07-25	Feet below surface:	21.78
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-07-20	Feet below surface:	21.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-07-15	Feet below surface:	21.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-07-10	Feet below surface:	21.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-07-05	Feet below surface:	21.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-06-30	Feet below surface:	21.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-06-25	Feet below surface:	21.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-06-20	Feet below surface:	21.67
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-06-15	Feet below surface:	21.55
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-06-10	Feet below surface:	21.46
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-06-05	Feet below surface:	21.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-05-31	Feet below surface:	21.23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-05-25	Feet below surface:	21.14
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-05-20	Feet below surface:	21.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-05-15	Feet below surface:	21.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-05-10	Feet below surface:	21.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-05-05	Feet below surface:	21.12
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1973-04-30	Feet below surface:	21.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-04-25	Feet below surface:	21.24
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-04-20	Feet below surface:	21.14
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-04-15	Feet below surface:	21.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-04-10	Feet below surface:	21.22
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-04-05	Feet below surface:	21.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-03-31	Feet below surface:	22.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-03-25	Feet below surface:	22.28
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-03-20	Feet below surface:	22.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-03-15	Feet below surface:	22.12
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-03-10	Feet below surface:	22.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-03-05	Feet below surface:	21.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-02-28	Feet below surface:	21.93
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-02-25	Feet below surface:	21.89
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-02-20	Feet below surface:	21.88
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-02-15	Feet below surface:	21.81
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-02-10	Feet below surface:	21.81
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-02-05	Feet below surface:	21.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-01-31	Feet below surface:	21.67
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-01-25	Feet below surface:	21.56
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-01-20	Feet below surface:	21.41
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1973-01-15	Feet below surface:	21.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-01-10	Feet below surface:	21.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1973-01-05	Feet below surface:	21.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-12-31	Feet below surface:	21.29
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-12-25	Feet below surface:	21.47
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-12-20	Feet below surface:	21.63
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-12-15	Feet below surface:	21.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-12-10	Feet below surface:	22.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-12-05	Feet below surface:	22.29
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-11-30	Feet below surface:	22.52
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-11-25	Feet below surface:	22.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-11-20	Feet below surface:	23.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-11-15	Feet below surface:	23.45
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-11-10	Feet below surface:	23.63
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-11-05	Feet below surface:	23.67
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-10-31	Feet below surface:	23.62
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-10-25	Feet below surface:	23.59
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-10-20	Feet below surface:	23.55
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-10-15	Feet below surface:	23.48
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-10-10	Feet below surface:	23.48
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-10-05	Feet below surface:	23.43
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1972-09-30	Feet below surface:	23.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-09-25	Feet below surface:	23.57
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-09-20	Feet below surface:	23.68
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-09-15	Feet below surface:	23.68
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-09-10	Feet below surface:	23.63
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-09-05	Feet below surface:	23.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-08-31	Feet below surface:	23.93
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-08-25	Feet below surface:	23.72
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-08-20	Feet below surface:	23.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-08-15	Feet below surface:	23.48
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-08-10	Feet below surface:	23.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-08-05	Feet below surface:	23.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-07-31	Feet below surface:	23.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-07-25	Feet below surface:	22.88
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-07-20	Feet below surface:	22.72
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-07-15	Feet below surface:	22.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-07-10	Feet below surface:	22.44
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-07-05	Feet below surface:	22.31
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-06-30	Feet below surface:	22.28
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-06-25	Feet below surface:	22.44
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-06-20	Feet below surface:	22.75
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1972-06-15	Feet below surface:	22.89
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-06-10	Feet below surface:	22.79
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-06-05	Feet below surface:	22.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-05-31	Feet below surface:	22.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-05-25	Feet below surface:	22.79
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-05-20	Feet below surface:	22.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-05-15	Feet below surface:	23.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-05-10	Feet below surface:	23.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-05-05	Feet below surface:	23.29
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-04-30	Feet below surface:	23.48
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-04-25	Feet below surface:	23.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-04-20	Feet below surface:	23.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-04-15	Feet below surface:	23.72
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-04-10	Feet below surface:	23.73
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-04-05	Feet below surface:	23.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-03-31	Feet below surface:	23.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-03-25	Feet below surface:	23.85
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-03-20	Feet below surface:	23.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-03-15	Feet below surface:	24.11
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-03-10	Feet below surface:	24.41
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-03-05	Feet below surface:	24.64
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1972-02-29	Feet below surface:	24.78
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-02-25	Feet below surface:	24.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-02-20	Feet below surface:	25.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-02-15	Feet below surface:	25.04
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-02-10	Feet below surface:	25.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-02-05	Feet below surface:	25.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-01-31	Feet below surface:	25.12
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-01-25	Feet below surface:	25.23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-01-20	Feet below surface:	25.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-01-15	Feet below surface:	25.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-01-10	Feet below surface:	25.49
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1972-01-05	Feet below surface:	25.57
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-12-31	Feet below surface:	25.64
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-12-25	Feet below surface:	25.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-12-20	Feet below surface:	25.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-12-15	Feet below surface:	25.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-12-10	Feet below surface:	25.81
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-12-05	Feet below surface:	25.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-11-30	Feet below surface:	25.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-11-25	Feet below surface:	26.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-11-20	Feet below surface:	26.00
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1971-11-15	Feet below surface:	25.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-11-10	Feet below surface:	25.91
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-11-05	Feet below surface:	25.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-10-31	Feet below surface:	25.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-10-25	Feet below surface:	25.79
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-10-20	Feet below surface:	25.73
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-10-15	Feet below surface:	25.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-10-10	Feet below surface:	25.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-10-05	Feet below surface:	25.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-09-30	Feet below surface:	25.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-09-25	Feet below surface:	25.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-09-20	Feet below surface:	25.22
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-09-15	Feet below surface:	25.11
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-09-10	Feet below surface:	25.01
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-09-05	Feet below surface:	24.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-08-31	Feet below surface:	24.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-08-25	Feet below surface:	24.61
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-08-20	Feet below surface:	24.89
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-08-15	Feet below surface:	24.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-08-10	Feet below surface:	24.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-08-05	Feet below surface:	24.60
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1971-07-31	Feet below surface:	24.48
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-07-25	Feet below surface:	24.33
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-07-20	Feet below surface:	24.21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-07-15	Feet below surface:	24.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-07-10	Feet below surface:	23.93
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-07-05	Feet below surface:	23.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-06-30	Feet below surface:	23.67
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-06-25	Feet below surface:	23.57
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-06-20	Feet below surface:	23.49
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-06-15	Feet below surface:	23.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-06-10	Feet below surface:	23.33
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-06-05	Feet below surface:	23.24
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-05-31	Feet below surface:	23.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-05-25	Feet below surface:	23.11
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-05-20	Feet below surface:	23.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-05-15	Feet below surface:	23.12
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-05-10	Feet below surface:	23.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-05-05	Feet below surface:	23.02
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-04-30	Feet below surface:	22.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-04-25	Feet below surface:	22.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-04-20	Feet below surface:	22.77
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1971-04-15	Feet below surface:	22.68
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-04-10	Feet below surface:	22.64
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-04-05	Feet below surface:	22.64
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-03-31	Feet below surface:	22.62
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-03-25	Feet below surface:	22.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-03-20	Feet below surface:	22.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-03-15	Feet below surface:	22.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-03-10	Feet below surface:	23.04
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-03-05	Feet below surface:	23.16
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-02-28	Feet below surface:	23.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-02-25	Feet below surface:	23.31
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-02-20	Feet below surface:	23.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-02-15	Feet below surface:	23.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-02-10	Feet below surface:	23.39
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-02-05	Feet below surface:	23.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-01-31	Feet below surface:	23.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-01-25	Feet below surface:	23.83
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-01-20	Feet below surface:	23.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-01-15	Feet below surface:	24.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-01-10	Feet below surface:	24.23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1971-01-05	Feet below surface:	24.35
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1970-12-31	Feet below surface:	24.48
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-12-25	Feet below surface:	24.64
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-12-20	Feet below surface:	24.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-12-15	Feet below surface:	24.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-12-10	Feet below surface:	24.68
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-12-05	Feet below surface:	24.63
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-11-30	Feet below surface:	24.72
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-11-25	Feet below surface:	24.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-11-20	Feet below surface:	24.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-11-15	Feet below surface:	24.73
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-11-10	Feet below surface:	24.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-11-05	Feet below surface:	25.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-10-31	Feet below surface:	25.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-10-25	Feet below surface:	25.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-10-20	Feet below surface:	25.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-10-15	Feet below surface:	25.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-10-10	Feet below surface:	25.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-10-05	Feet below surface:	24.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-09-30	Feet below surface:	24.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-09-25	Feet below surface:	24.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-09-20	Feet below surface:	24.66
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1970-09-15	Feet below surface:	24.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-09-10	Feet below surface:	24.47
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-09-05	Feet below surface:	24.38
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-08-31	Feet below surface:	24.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-08-25	Feet below surface:	24.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-08-20	Feet below surface:	24.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-08-15	Feet below surface:	24.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-08-10	Feet below surface:	23.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-08-05	Feet below surface:	23.89
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-07-31	Feet below surface:	23.79
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-07-25	Feet below surface:	23.67
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-07-20	Feet below surface:	23.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-07-15	Feet below surface:	23.56
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-07-10	Feet below surface:	23.49
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-07-05	Feet below surface:	23.43
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-06-30	Feet below surface:	23.37
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-06-25	Feet below surface:	23.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-06-20	Feet below surface:	23.21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-06-15	Feet below surface:	23.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-06-10	Feet below surface:	23.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-06-05	Feet below surface:	23.02
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1970-05-31	Feet below surface:	22.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-05-25	Feet below surface:	22.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-05-20	Feet below surface:	22.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-05-15	Feet below surface:	22.56
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-05-10	Feet below surface:	22.42
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-05-05	Feet below surface:	22.29
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-04-30	Feet below surface:	22.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-04-25	Feet below surface:	22.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-04-20	Feet below surface:	21.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-04-15	Feet below surface:	21.83
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-04-10	Feet below surface:	21.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-04-05	Feet below surface:	22.44
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-03-31	Feet below surface:	22.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-03-25	Feet below surface:	22.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-03-20	Feet below surface:	22.81
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-03-15	Feet below surface:	22.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-03-10	Feet below surface:	22.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-03-05	Feet below surface:	22.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-02-28	Feet below surface:	22.42
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-02-25	Feet below surface:	22.38
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-02-20	Feet below surface:	22.40
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1970-02-15	Feet below surface:	22.52
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-02-10	Feet below surface:	22.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-02-05	Feet below surface:	22.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-01-31	Feet below surface:	22.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-01-25	Feet below surface:	22.81
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-01-20	Feet below surface:	22.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-01-15	Feet below surface:	22.64
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-01-10	Feet below surface:	22.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-01-05	Feet below surface:	22.62
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-12-31	Feet below surface:	22.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-12-25	Feet below surface:	23.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-12-20	Feet below surface:	24.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-12-15	Feet below surface:	24.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-12-10	Feet below surface:	24.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-12-05	Feet below surface:	24.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-11-30	Feet below surface:	24.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-11-25	Feet below surface:	24.46
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-11-20	Feet below surface:	24.61
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-11-15	Feet below surface:	24.83
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-11-10	Feet below surface:	25.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-11-05	Feet below surface:	25.32
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1969-10-31	Feet below surface:	25.33
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-10-25	Feet below surface:	25.26
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-10-20	Feet below surface:	25.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-10-15	Feet below surface:	25.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-10-10	Feet below surface:	25.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-10-05	Feet below surface:	25.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-09-30	Feet below surface:	24.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-09-25	Feet below surface:	24.86
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-09-20	Feet below surface:	24.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-09-15	Feet below surface:	24.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-09-10	Feet below surface:	24.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-09-05	Feet below surface:	24.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-08-31	Feet below surface:	24.63
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-08-25	Feet below surface:	24.51
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-08-20	Feet below surface:	24.42
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-08-15	Feet below surface:	24.34
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-08-10	Feet below surface:	24.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-08-05	Feet below surface:	24.17
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-07-31	Feet below surface:	24.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-07-25	Feet below surface:	23.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-07-20	Feet below surface:	23.86
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1969-07-15	Feet below surface:	23.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-07-10	Feet below surface:	23.62
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-07-05	Feet below surface:	23.47
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-06-30	Feet below surface:	23.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-06-25	Feet below surface:	23.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-06-20	Feet below surface:	23.16
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-06-15	Feet below surface:	23.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-06-10	Feet below surface:	22.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-06-05	Feet below surface:	22.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-05-31	Feet below surface:	22.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-05-25	Feet below surface:	22.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-05-20	Feet below surface:	22.46
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-05-15	Feet below surface:	22.34
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-05-10	Feet below surface:	22.28
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-05-05	Feet below surface:	22.29
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-04-30	Feet below surface:	22.39
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-04-25	Feet below surface:	22.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-04-20	Feet below surface:	22.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-04-15	Feet below surface:	22.60
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-04-10	Feet below surface:	22.61
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-04-05	Feet below surface:	22.63
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1969-03-31	Feet below surface:	22.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-03-25	Feet below surface:	22.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-03-20	Feet below surface:	22.68
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-03-15	Feet below surface:	22.88
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-03-10	Feet below surface:	23.16
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-03-05	Feet below surface:	23.48
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-02-28	Feet below surface:	23.83
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-02-25	Feet below surface:	24.02
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-02-20	Feet below surface:	24.12
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-02-15	Feet below surface:	24.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-02-10	Feet below surface:	24.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-02-05	Feet below surface:	24.21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-01-31	Feet below surface:	24.14
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-01-25	Feet below surface:	24.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-01-20	Feet below surface:	24.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-01-15	Feet below surface:	24.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-01-10	Feet below surface:	24.14
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-01-05	Feet below surface:	24.34
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-12-31	Feet below surface:	24.72
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-12-25	Feet below surface:	24.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-12-20	Feet below surface:	24.98
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1968-12-15	Feet below surface:	24.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-12-10	Feet below surface:	25.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-12-05	Feet below surface:	24.99
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-11-30	Feet below surface:	24.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-11-25	Feet below surface:	24.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-11-20	Feet below surface:	24.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-11-15	Feet below surface:	24.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-11-10	Feet below surface:	25.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-11-05	Feet below surface:	25.01
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-10-31	Feet below surface:	24.93
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-10-25	Feet below surface:	24.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-10-20	Feet below surface:	24.79
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-10-15	Feet below surface:	24.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-10-10	Feet below surface:	24.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-10-05	Feet below surface:	24.57
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-09-30	Feet below surface:	24.51
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-09-25	Feet below surface:	24.44
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-09-20	Feet below surface:	24.37
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-09-15	Feet below surface:	24.31
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-09-10	Feet below surface:	24.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-09-05	Feet below surface:	24.17
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1968-08-31	Feet below surface:	24.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-08-25	Feet below surface:	23.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-08-20	Feet below surface:	23.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-08-15	Feet below surface:	23.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-08-10	Feet below surface:	23.74
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-08-05	Feet below surface:	23.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-07-31	Feet below surface:	23.57
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-07-25	Feet below surface:	23.46
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-07-20	Feet below surface:	23.37
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-07-15	Feet below surface:	23.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-07-10	Feet below surface:	23.26
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-07-05	Feet below surface:	23.23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-06-30	Feet below surface:	23.21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-06-25	Feet below surface:	23.28
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-06-20	Feet below surface:	23.26
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-06-15	Feet below surface:	23.22
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-06-10	Feet below surface:	23.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-06-05	Feet below surface:	23.15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-05-31	Feet below surface:	23.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-05-25	Feet below surface:	23.05
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-05-20	Feet below surface:	22.97
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1968-05-15	Feet below surface:	22.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-05-10	Feet below surface:	22.86
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-05-05	Feet below surface:	22.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-04-30	Feet below surface:	22.67
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-04-25	Feet below surface:	22.57
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-04-20	Feet below surface:	22.43
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-04-15	Feet below surface:	22.37
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-04-10	Feet below surface:	22.26
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-04-05	Feet below surface:	22.28
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-03-31	Feet below surface:	22.34
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-03-25	Feet below surface:	22.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-03-20	Feet below surface:	22.85
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-03-15	Feet below surface:	22.99
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-03-10	Feet below surface:	23.26
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-03-05	Feet below surface:	23.18
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-02-29	Feet below surface:	23.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-02-25	Feet below surface:	23.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-02-20	Feet below surface:	22.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-02-15	Feet below surface:	22.88
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-02-10	Feet below surface:	22.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-02-05	Feet below surface:	22.82
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1968-01-31	Feet below surface:	22.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-01-25	Feet below surface:	22.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-01-20	Feet below surface:	22.88
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-01-15	Feet below surface:	22.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-01-10	Feet below surface:	23.02
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-01-05	Feet below surface:	23.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-12-31	Feet below surface:	23.29
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-12-25	Feet below surface:	23.42
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-12-20	Feet below surface:	23.49
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-12-15	Feet below surface:	23.53
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-12-10	Feet below surface:	23.61
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-12-05	Feet below surface:	23.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-11-30	Feet below surface:	23.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-11-25	Feet below surface:	23.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-11-20	Feet below surface:	23.72
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-11-15	Feet below surface:	23.64
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-11-10	Feet below surface:	23.54
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-11-05	Feet below surface:	23.43
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-10-31	Feet below surface:	23.34
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-10-25	Feet below surface:	23.22
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-10-20	Feet below surface:	23.11
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1967-10-15	Feet below surface:	23.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-10-10	Feet below surface:	22.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-10-05	Feet below surface:	22.86
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-09-30	Feet below surface:	22.81
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-09-25	Feet below surface:	22.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-09-20	Feet below surface:	22.63
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-09-15	Feet below surface:	22.51
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-09-10	Feet below surface:	22.39
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-09-05	Feet below surface:	22.38
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-08-31	Feet below surface:	22.53
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-08-25	Feet below surface:	22.81
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-08-20	Feet below surface:	22.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-08-15	Feet below surface:	22.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-08-10	Feet below surface:	22.80
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-07-26	Feet below surface:	22.73
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-06-27	Feet below surface:	22.11
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-05-31	Feet below surface:	21.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-04-25	Feet below surface:	23.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-03-29	Feet below surface:	24.29
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-02-28	Feet below surface:	25.45
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-01-27	Feet below surface:	25.53
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1966-12-21	Feet below surface:	25.78
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1966-11-28	Feet below surface:	25.51
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1966-10-25	Feet below surface:	26.22
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1966-09-27	Feet below surface:	26.14
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1966-08-25	Feet below surface:	26.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1966-07-21	Feet below surface:	25.46
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1966-06-23	Feet below surface:	24.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1966-05-29	Feet below surface:	25.71
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1966-04-25	Feet below surface:	25.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1966-03-21	Feet below surface:	25.38
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1966-02-28	Feet below surface:	25.68
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1966-01-31	Feet below surface:	26.10
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1965-12-26	Feet below surface:	26.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1965-11-23	Feet below surface:	25.99
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1965-10-27	Feet below surface:	25.87
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1965-09-28	Feet below surface:	25.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1965-08-26	Feet below surface:	25.59
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1965-07-28	Feet below surface:	25.22
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1965-06-28	Feet below surface:	24.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1965-05-28	Feet below surface:	24.29
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1965-04-28	Feet below surface:	23.96
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1965-03-29	Feet below surface:	23.81
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1965-02-28	Feet below surface:	23.79
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1965-01-29	Feet below surface:	24.32
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1964-12-29	Feet below surface:	24.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1964-11-24	Feet below surface:	25.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1964-10-27	Feet below surface:	24.83
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1964-09-28	Feet below surface:	24.92
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1964-08-31	Feet below surface:	24.59
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1964-07-29	Feet below surface:	24.02
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1964-06-30	Feet below surface:	23.48
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1964-05-27	Feet below surface:	22.62
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1964-04-28	Feet below surface:	21.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1964-03-30	Feet below surface:	22.83
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1964-02-28	Feet below surface:	23.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1964-01-31	Feet below surface:	23.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1963-12-30	Feet below surface:	24.47
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1963-11-30	Feet below surface:	24.42
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1963-10-25	Feet below surface:	24.73
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1963-09-30	Feet below surface:	24.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1963-08-29	Feet below surface:	24.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1963-07-31	Feet below surface:	23.62
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1963-06-28	Feet below surface:	22.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1963-05-29	Feet below surface:	22.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1963-04-30	Feet below surface:	22.36
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1963-03-31	Feet below surface:	22.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1963-02-28	Feet below surface:	22.41
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1963-01-31	Feet below surface:	23.09
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1962-12-28	Feet below surface:	23.14
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1962-11-29	Feet below surface:	23.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1962-10-30	Feet below surface:	23.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1962-09-26	Feet below surface:	23.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1962-04-28	Feet below surface:	22.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1961-11-30	Feet below surface:	22.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1961-10-31	Feet below surface:	23.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1961-07-31	Feet below surface:	23.38
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1961-05-31	Feet below surface:	22.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1961-03-30	Feet below surface:	22.86
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1961-02-28	Feet below surface:	23.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1961-01-31	Feet below surface:	23.88
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1960-12-31	Feet below surface:	24.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1960-11-30	Feet below surface:	24.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1960-10-31	Feet below surface:	24.60
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1960-09-30	Feet below surface:	24.16
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1960-08-31	Feet below surface:	23.70
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1960-07-31	Feet below surface:	23.07
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1960-06-30	Feet below surface:	22.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1960-05-31	Feet below surface:	22.04
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1960-04-30	Feet below surface:	21.50
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1960-03-29	Feet below surface:	22.21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1960-02-28	Feet below surface:	22.11
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1960-01-31	Feet below surface:	23.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1959-08-31	Feet below surface:	23.23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1959-07-31	Feet below surface:	22.34
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1959-05-31	Feet below surface:	22.08
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1959-04-30	Feet below surface:	21.79
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1959-03-31	Feet below surface:	21.99
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1959-02-02	Feet below surface:	22.65
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1959-01-27	Feet below surface:	23.26
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1958-02-28	Feet below surface:	23.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1958-01-31	Feet below surface:	22.99
Feet to sea level:	Not Reported	Note:	Not Reported

16
SSW
1/2 - 1 Mile
Higher

MA WELLS **MA9000000005550**

PWS ID:	Not Reported	Site Name:	Not Reported
Type:	Not Reported	Facility Name:	RITE AID PHARMACY 10189

SubBasin: CAPE COD

Basemap: DOQ
Feature Type: CB
Primary Location Source: MS_GMAP
Tertiary Location Source: Not Reported
Date Mapped: 08-NOV-13
Accuracy Estimate (ft): 100
Location Method: PHO
Secondary Location Source: Not Reported
UST ID: 0

17
South
1/2 - 1 Mile
Higher

MA WELLS **MA9000000004584**

PWS ID: Not Reported
Type: Not Reported
SubBasin: CAPE COD
Site Name: Not Reported
Facility Name: AUTOZONE 5160

Basemap: DOQ
Feature Type: FDU
Primary Location Source: AP_DOQ
Tertiary Location Source: Not Reported
Date Mapped: 05-FEB-07
Accuracy Estimate (ft): 500
Location Method: PHO
Secondary Location Source: Not Reported
UST ID: 0

18
ESE
1/2 - 1 Mile
Higher

FED USGS **USGS40000457695**

Organization ID: USGS-MA
Organization Name: USGS Massachusetts Water Science Center
Monitor Location: MA-A1W 302
Description: Not Reported
Drainage Area: Not Reported
Contrib Drainage Area: Not Reported
Aquifer: Sand and gravel aquifers (glaciated regions)
Formation Type: Not Reported
Construction Date: 19720427
Well Depth Units: ft
Well Hole Depth Units: ft
Type: Well
HUC: 01090002
Drainage Area Units: Not Reported
Contrib Drainage Area Unts: Not Reported
Aquifer Type: Not Reported
Well Depth: 56
Well Hole Depth: 56

Ground water levels,Number of Measurements: 17
Feet below surface: 9.13
Note: Not Reported
Level reading date: 1977-04-01
Feet to sea level: Not Reported

Level reading date: 1977-03-17
Feet to sea level: Not Reported
Feet below surface: 9.87
Note: Not Reported

Level reading date: 1976-12-02
Feet to sea level: Not Reported
Feet below surface: 12.19
Note: Not Reported

Level reading date: 1976-10-29
Feet to sea level: Not Reported
Feet below surface: 11.04
Note: Not Reported

Level reading date: 1976-09-29
Feet to sea level: Not Reported
Feet below surface: 10.86
Note: Not Reported

Level reading date:	1976-08-24	Feet below surface:	10.24
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-07-27	Feet below surface:	9.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-06-30	Feet below surface:	9.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-26	Feet below surface:	8.39
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-04-28	Feet below surface:	7.84
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-03-24	Feet below surface:	7.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-25	Feet below surface:	7.25
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-30	Feet below surface:	7.22
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-12-16	Feet below surface:	8.69
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-25	Feet below surface:	9.02
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-05	Feet below surface:	9.53
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-10-02	Feet below surface:	10.13
Feet to sea level:	Not Reported	Note:	Not Reported

D19
North
1/2 - 1 Mile
Higher

MA WELLS **MA9000000001333**

PWS ID:	4020004	Site Name:	MARY DUNN WELL 3
Type:	Community Groundwater Well		
Facility Name:	Not Reported	SubBasin:	CAPE COD
Basemap:	NA	Accuracy Estimate (ft):	100
Feature Type:	GW	Location Method:	GP_6
Primary Location Source:	SV	Secondary Location Source:	Not Reported
Tertiary Location Source:	Not Reported		
Source ID:	4020004-08G		
PWS Name:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Source Name:	MARY DUNN WELL 3	PWS Status:	A
Source Status:	A	PWS Class:	COM
Source Availability:	ACTIVE		
Well Name:	MARY DUNN WELL 3		
Purveyor:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		

Basin:	CAPE COD	Region:	4

20
West
1/2 - 1 Mile
Higher

MA WELLS **MA9000000005057**

PWS ID:	Not Reported	Site Name:	Not Reported
Type:	Not Reported	Facility Name:	CAPE AIR & NANTUCKET AIRLINES
SubBasin:	CAPE COD		
Basemap:	DOQ	Accuracy Estimate (ft):	16
Feature Type:	CB	Location Method:	PHO
Primary Location Source:	KNOW	Secondary Location Source:	Not Reported
Tertiary Location Source:	Not Reported	UST ID:	0
Date Mapped:	19-JAN-10		

D21
North
1/2 - 1 Mile
Higher

FED USGS **USGS40000457940**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 403	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19750416	Well Depth:	55.2
Well Depth Units:	ft	Well Hole Depth:	57
Well Hole Depth Units:	ft		
Ground water levels,Number of Measurements:	1	Level reading date:	1975-06-04
Feet below surface:	20.00	Feet to sea level:	Not Reported
Note:	Not Reported		

D22
North
1/2 - 1 Mile
Higher

FED USGS **USGS40000457939**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 348	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19730308	Well Depth:	59
Well Depth Units:	ft	Well Hole Depth:	70
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1973-03-13
Feet below surface:	17.30	Feet to sea level:	Not Reported
Note:	Not Reported		

23
East **FED USGS** **USGS40000457769**
1/2 - 1 Mile
Higher

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 379	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720426	Well Depth:	63
Well Depth Units:	ft	Well Hole Depth:	63
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1972-04-26
Feet below surface:	3.50	Feet to sea level:	Not Reported
Note:	Not Reported		

24
NNE **FED USGS** **USGS40000457926**
1/2 - 1 Mile
Lower

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 297	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720215	Well Depth:	42
Well Depth Units:	ft	Well Hole Depth:	70
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	16	Level reading date:	1977-03-30
Feet below surface:	5.54	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1976-12-02	Feet below surface:	7.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-10-29	Feet below surface:	6.86
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-09-30	Feet below surface:	6.90
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-08-25	Feet below surface:	6.64
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1976-07-27	Feet below surface:	6.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-07-02	Feet below surface:	4.98
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-25	Feet below surface:	2.61
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-04-28	Feet below surface:	2.42
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-03-24	Feet below surface:	2.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-26	Feet below surface:	2.21
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-21	Feet below surface:	2.97
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-12-16	Feet below surface:	4.30
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-25	Feet below surface:	4.83
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-05	Feet below surface:	5.36
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-10-02	Feet below surface:	6.08
Feet to sea level:	Not Reported	Note:	Not Reported

25
NE
1/2 - 1 Mile
Higher

FED USGS **USGS40000457907**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 388	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720210	Well Depth:	42
Well Depth Units:	ft	Well Hole Depth:	77
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1972-02-10
Feet below surface:	11.50	Feet to sea level:	Not Reported
Note:	Not Reported		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

E26
NW
1/2 - 1 Mile
Higher

MA WELLS **MA9000000002935**

PWS ID:	4020000	Site Name:	GP WELL 5
Type:	Community Groundwater Well		
Facility Name:	Not Reported	SubBasin:	CAPE COD
Basemap:	DOQ	Accuracy Estimate (ft):	16
Feature Type:	GW	Location Method:	PHO
Primary Location Source:	SV	Secondary Location Source:	AP_DOQ
Tertiary Location Source:	Not Reported		
Source ID:	4020000-05G	PWS Name:	BARNSTABLE FIRE DISTRICT
Source Name:	GP WELL 5	PWS Status:	A
Source Status:	A	PWS Class:	COM
Source Availability:	ACTIVE		
Well Name:	GP WELL 5	Purveyor:	BARNSTABLE FIRE DISTRICT
Basin:	CAPE COD	Region:	4

F27
North
1/2 - 1 Mile
Lower

MA WELLS **MA9000000003380**

PWS ID:	4020004	Site Name:	MARY DUNN WELL 4
Type:	Community Groundwater Well		
Facility Name:	Not Reported	SubBasin:	CAPE COD
Basemap:	DOQ	Accuracy Estimate (ft):	100
Feature Type:	PH	Location Method:	PHO
Primary Location Source:	AP_DOQ	Secondary Location Source:	Not Reported
Tertiary Location Source:	Not Reported		
Source ID:	4020004-09G		
PWS Name:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Source Name:	MARY DUNN WELL 4	PWS Status:	A
Source Status:	A	PWS Class:	COM
Source Availability:	EMERG		
Well Name:	MARY DUNN WELL 4		
Purveyor:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Basin:	CAPE COD	Region:	4

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

28
WSW
1/2 - 1 Mile
Higher | **FED USGS** | **USGS40000457696**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 434-0058	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Outwash	Aquifer Type:	Unconfined single aquifer
Construction Date:	19850917	Well Depth:	58
Well Depth Units:	ft	Well Hole Depth:	75
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1985-09-17
Feet below surface:	23.50	Feet to sea level:	Not Reported
Note:	Not Reported		

E29
NW
1/2 - 1 Mile
Higher | **FED USGS** | **USGS40000457941**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 289	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	1966	Well Depth:	70.6
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	17	Level reading date:	1977-03-30
Feet below surface:	3.20	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1977-03-17	Feet below surface:	3.54
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-12-02	Feet below surface:	4.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-10-29	Feet below surface:	4.33
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-09-30	Feet below surface:	4.17
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-08-25	Feet below surface:	3.51
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1976-07-27	Feet below surface:	3.02
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-07-02	Feet below surface:	2.20
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-25	Feet below surface:	0.66
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-04-28	Feet below surface:	0.11
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-03-24	Feet below surface:	0.00
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-26	Feet below surface:	0.11
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-21	Feet below surface:	0.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-12-16	Feet below surface:	1.96
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-25	Feet below surface:	2.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-11-05	Feet below surface:	3.23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1975-10-02	Feet below surface:	3.70
Feet to sea level:	Not Reported	Note:	Not Reported

F30
North
1/2 - 1 Mile
Lower

FED USGS **USGS40000458027**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 349	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19730313	Well Depth:	45
Well Depth Units:	ft	Well Hole Depth:	73.5
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1973-03-13
Feet below surface:	2.50	Feet to sea level:	Not Reported
Note:	Not Reported		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

F31
North
1/2 - 1 Mile
Lower

FED USGS **USGS40000458028**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 402	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19750522	Well Depth:	46.2
Well Depth Units:	ft	Well Hole Depth:	46.2
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1975-06-04
Feet below surface:	5.20	Feet to sea level:	Not Reported
Note:	Not Reported		

32
East
1/2 - 1 Mile
Lower

MA WELLS **MA9000000004513**

PWS ID:	Not Reported	Site Name:	Not Reported
Type:	Not Reported	Facility Name:	BALISE HYUNDAI
SubBasin:	CAPE COD		

Basemap:	DOQ	Accuracy Estimate (ft):	16
Feature Type:	CB	Location Method:	PHO
Primary Location Source:	MS_WWW	Secondary Location Source:	Not Reported
Tertiary Location Source:	Not Reported	UST ID:	0
Date Mapped:	21-FEB-13		

33
SSW
1/2 - 1 Mile
Higher

AQUIFLOW **5215**

Site ID:	4-0000027
Groundwater Flow:	Not Reported
Shallowest Water Table Depth:	20
Deepest Water Table Depth:	Not Reported
Date:	5/22/1991

G34
NNE
1/2 - 1 Mile
Higher

FED USGS **USGS40000458026**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 296	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		

Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720203	Well Depth:	56
Well Depth Units:	ft	Well Hole Depth:	63
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1972-02-03
Feet below surface:	19.00	Feet to sea level:	Not Reported
Note:	Not Reported		

H35
East
1/2 - 1 Mile
Lower

MA WELLS **MA9000000004884**

PWS ID:	Not Reported	Site Name:	Not Reported
Type:	Not Reported	Facility Name:	CADILLAC SAAB OF CAPE COD
SubBasin:	CAPE COD		

Basemap:	DOQ	Accuracy Estimate (ft):	16
Feature Type:	CB	Location Method:	PHO
Primary Location Source:	OTH	Secondary Location Source:	Not Reported
Tertiary Location Source:	Not Reported	UST ID:	0
Date Mapped:	14-DEC-09		

36
NW
1/2 - 1 Mile
Lower

FED USGS **USGS40000457942**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 287	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	1964	Well Depth:	58.6
Well Depth Units:	ft	Well Hole Depth:	58.6
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	13	Level reading date:	1977-03-30
Feet below surface:	5.51	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1977-03-17	Feet below surface:	6.13
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-12-02	Feet below surface:	7.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-10-29	Feet below surface:	7.52
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-09-30	Feet below surface:	7.32
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1976-08-25	Feet below surface:	6.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-07-27	Feet below surface:	6.23
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-07-02	Feet below surface:	5.40
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-05-25	Feet below surface:	4.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-04-28	Feet below surface:	3.35
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-03-24	Feet below surface:	3.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-02-26	Feet below surface:	3.17
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1976-01-21	Feet below surface:	3.95
Feet to sea level:	Not Reported	Note:	Not Reported

37
South
1/2 - 1 Mile
Lower

MA WELLS **MA9000000004991**

PWS ID:	Not Reported	Site Name:	Not Reported
Type:	Not Reported	Facility Name:	ACME LAUNDRY CO INC
SubBasin:	CAPE COD		
Basemap:	DOQ	Accuracy Estimate (ft):	100
Feature Type:	CB	Location Method:	PHO
Primary Location Source:	DD_PAR	Secondary Location Source:	AP_PC
Tertiary Location Source:	AP_DOQ	UST ID:	0
Date Mapped:	21-FEB-07		

38
WSW
1/2 - 1 Mile
Higher

MA WELLS **MA9000000004340**

PWS ID:	Not Reported	Site Name:	Not Reported
Type:	Not Reported	Facility Name:	SEARS 2323
SubBasin:	CAPE COD		
Basemap:	DOQ	Accuracy Estimate (ft):	16
Feature Type:	CB	Location Method:	PHO
Primary Location Source:	KNOW	Secondary Location Source:	Not Reported
Tertiary Location Source:	Not Reported	UST ID:	0
Date Mapped:	20-OCT-09		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

G39
NNE
1/2 - 1 Mile
Lower

FED USGS **USGS40000458036**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 352	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720216	Well Depth:	42
Well Depth Units:	ft	Well Hole Depth:	63
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1972-02-16
Feet below surface:	13.20	Feet to sea level:	Not Reported
Note:	Not Reported		

H40
East
1/2 - 1 Mile
Lower

MA WELLS **MA9000000004293**

PWS ID:	Not Reported	Site Name:	Not Reported
Type:	Not Reported	Facility Name:	AIRPORT MOTORS INC
SubBasin:	CAPE COD		

Basemap:	DOQ	Accuracy Estimate (ft):	100
Feature Type:	CB	Location Method:	PHO
Primary Location Source:	DD_FAC	Secondary Location Source:	DD_PAR
Tertiary Location Source:	AP_DOQ	UST ID:	1077
Date Mapped:	27-FEB-13		

I41
SE
1/2 - 1 Mile
Lower

MA WELLS **MA9000000001745**

PWS ID:	4020004	Site Name:	MAHER WELL 1
Type:	Community Groundwater Well		
Facility Name:	Not Reported	SubBasin:	CAPE COD

Basemap:	NA	Accuracy Estimate (ft):	100
Feature Type:	GW	Location Method:	GP_6
Primary Location Source:	SV	Secondary Location Source:	Not Reported
Tertiary Location Source:	Not Reported		

Source ID:	4020004-07G		
PWS Name:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Source Name:	MAHER WELL 1	PWS Status:	A

Source Status:	A	PWS Class:	COM
Source Availability:	ACTIVE		

Well Name:	MAHER WELL 1
Purveyor:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE
Basin:	CAPE COD

Region: 4

I42
SE
1/2 - 1 Mile
Lower

FED USGS **USGS40000457542**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 377	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19630325	Well Depth:	80
Well Depth Units:	ft	Well Hole Depth:	80
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1963-03-25
Feet below surface:	3.20	Feet to sea level:	Not Reported
Note:	Not Reported		

I43
SE
1/2 - 1 Mile
Lower

FED USGS **USGS40000457543**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 410	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19630111	Well Depth:	46
Well Depth Units:	ft	Well Hole Depth:	91
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1963-01-12
Feet below surface:	3.90	Feet to sea level:	Not Reported
Note:	Not Reported		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

44
SSW
1/2 - 1 Mile
Higher

FED USGS **USGS40000457491**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 449-0059	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Outwash	Aquifer Type:	Unconfined single aquifer
Construction Date:	19850820	Well Depth:	59
Well Depth Units:	ft	Well Hole Depth:	100
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1985-08-20
Feet below surface:	20.31	Feet to sea level:	Not Reported
Note:	Not Reported		

I45
SE
1/2 - 1 Mile
Lower

FED USGS **USGS40000457541**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 411	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19630109	Well Depth:	56
Well Depth Units:	ft	Well Hole Depth:	84
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1963-01-09
Feet below surface:	2.40	Feet to sea level:	Not Reported
Note:	Not Reported		

46
NW
1/2 - 1 Mile
Higher

FED USGS **USGS40000457927**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 450-0060	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Outwash	Aquifer Type:	Unconfined single aquifer
Construction Date:	19850830	Well Depth:	60

Well Depth Units:	ft	Well Hole Depth:	68
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1985-08-30
Feet below surface:	29.4	Feet to sea level:	Not Reported
Note:	Not Reported		

47
NNW
1/2 - 1 Mile
Higher

FED USGS **USGS40000458098**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 346	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	1965	Well Depth:	64
Well Depth Units:	ft	Well Hole Depth:	64
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1965-01-01
Feet below surface:	6.00	Feet to sea level:	Not Reported
Note:	Not Reported		

J48
NNW
1/2 - 1 Mile
Higher

MA WELLS **MA9000000002678**

PWS ID:	4020000	Site Name:	GP WELL # 2
Type:	Community Groundwater Well		
Facility Name:	Not Reported	SubBasin:	CAPE COD

Basemap:	DOQ	Accuracy Estimate (ft):	100
Feature Type:	PH	Location Method:	MAP
Primary Location Source:	MS_SKCH	Secondary Location Source:	VERB
Tertiary Location Source:	AP_DOQ		

Source ID:	4020000-02G	PWS Name:	BARNSTABLE FIRE DISTRICT
Source Name:	GP WELL # 2	PWS Status:	A
Source Status:	A	PWS Class:	COM
Source Availability:	ACTIVE		

Well Name:	GP WELL # 2	Purveyor:	BARNSTABLE FIRE DISTRICT
Basin:	CAPE COD	Region:	4

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

49
West
1/2 - 1 Mile
Higher

MA WELLS **MA9000000004885**

PWS ID:	Not Reported	Site Name:	Not Reported
Type:	Not Reported	Facility Name:	SULLIVAN TIRE
SubBasin:	CAPE COD		
Basemap:	DOQ	Accuracy Estimate (ft):	16
Feature Type:	CB	Location Method:	PHO
Primary Location Source:	OTH	Secondary Location Source:	DD_PAR
Tertiary Location Source:	Not Reported	UST ID:	0
Date Mapped:	14-DEC-09		

J50
NNW
1/2 - 1 Mile
Higher

FED USGS **USGS40000458037**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 370	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Unconfined single aquifer
Construction Date:	19661208	Well Depth:	67.5
Well Depth Units:	ft	Well Hole Depth:	69
Well Hole Depth Units:	ft		
Ground water levels,Number of Measurements:	1	Level reading date:	1966-12-08
Feet below surface:	21.20	Feet to sea level:	Not Reported
Note:	Not Reported		

I51
SE
1/2 - 1 Mile
Lower

MA WELLS **MA9000000001534**

PWS ID:	4020004	Site Name:	MAHER WELL 3
Type:	Community Groundwater Well		
Facility Name:	Not Reported	SubBasin:	CAPE COD
Basemap:	NA	Accuracy Estimate (ft):	100
Feature Type:	GW	Location Method:	GP_6
Primary Location Source:	SV	Secondary Location Source:	Not Reported
Tertiary Location Source:	Not Reported		
Source ID:	4020004-11G		
PWS Name:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Source Name:	MAHER WELL 3	PWS Status:	A

Source Status:	A	PWS Class:	COM
Source Availability:	ACTIVE		
Well Name:	MAHER WELL 3		
Purveyor:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Basin:	CAPE COD	Region:	4

K52
WNW **FED USGS** **USGS40000457849**
1/2 - 1 Mile
Higher

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 431	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	Not Reported	Well Hole Depth Units:	Not Reported

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I53
SE **FED USGS** **USGS40000457534**
1/2 - 1 Mile
Lower

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 386	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19711012	Well Depth:	51
Well Depth Units:	ft	Well Hole Depth:	51
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1974-10-12
Feet below surface:	6.20	Feet to sea level:	Not Reported
Note:	Not Reported		

L54
SE **MA WELLS** **MA9000000000255**
1/2 - 1 Mile
Lower

PWS ID:	4020004	Site Name:	MAHER WELL 2
Type:	Community Groundwater Well		
Facility Name:	Not Reported	SubBasin:	CAPE COD
Basemap:	NA	Accuracy Estimate (ft):	100

Feature Type:	GW	Location Method:	GP_6
Primary Location Source:	SV	Secondary Location Source:	Not Reported
Tertiary Location Source:	Not Reported		

Source ID:	4020004-02G		
PWS Name:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Source Name:	MAHER WELL 2	PWS Status:	A
Source Status:	A	PWS Class:	COM
Source Availability:	ACTIVE		

Well Name:	MAHER WELL 2		
Purveyor:	HYANNIS WATER SYSTEM, TOWN OF BARNSTABLE		
Basin:	CAPE COD	Region:	4

K55
WNW
1/2 - 1 Mile
Higher

FED USGS **USGS40000457850**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 432	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	Not Reported	Well Hole Depth Units:	Not Reported

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56
West
1/2 - 1 Mile
Higher

FED USGS **USGS40000457770**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 462-0065	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Outwash	Aquifer Type:	Unconfined single aquifer
Construction Date:	19791217	Well Depth:	65
Well Depth Units:	ft	Well Hole Depth:	65
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1983-06-24
Feet below surface:	9.19	Feet to sea level:	Not Reported
Note:	Not Reported		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

57
NE
1/2 - 1 Mile
Higher

FED USGS **USGS40000457973**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 353	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720308	Well Depth:	70
Well Depth Units:	ft	Well Hole Depth:	77
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1972-03-09
Feet below surface:	11.00	Feet to sea level:	Not Reported
Note:	Not Reported		

58
North
1/2 - 1 Mile
Higher

FED USGS **USGS40000458143**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 351	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720202	Well Depth:	49
Well Depth Units:	ft	Well Hole Depth:	63
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1972-02-02
Feet below surface:	7.50	Feet to sea level:	Not Reported
Note:	Not Reported		

L59
SE
1/2 - 1 Mile
Lower

FED USGS **USGS40000457527**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 385	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19681106	Well Depth:	51.5

Well Depth Units:	ft	Well Hole Depth:	52.5
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1968-11-06
Feet below surface:	4.50	Feet to sea level:	Not Reported
Note:	Not Reported		

60
SE
1/2 - 1 Mile
Lower

FED USGS **USGS40000457526**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 412	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19630117	Well Depth:	61
Well Depth Units:	ft	Well Hole Depth:	75
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1963-01-17
Feet below surface:	4.30	Feet to sea level:	Not Reported
Note:	Not Reported		

61
South
1/2 - 1 Mile
Lower

MA WELLS **MA9000000004000**

PWS ID:	Not Reported	Site Name:	Not Reported
Type:	Not Reported	Facility Name:	DICK BEARD CHEVROLET
SubBasin:	CAPE COD		

Basemap:	DOQ	Accuracy Estimate (ft):	16
Feature Type:	CB	Location Method:	PHO
Primary Location Source:	KNOW	Secondary Location Source:	DD_PAR
Tertiary Location Source:	Not Reported	UST ID:	0
Date Mapped:	19-JAN-10		

62
NNE
1/2 - 1 Mile
Higher

FED USGS **USGS40000458149**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 350	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		

Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720128	Well Depth:	126
Well Depth Units:	ft	Well Hole Depth:	126
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1972-01-28
Feet below surface:	7.80	Feet to sea level:	Not Reported
Note:	Not Reported		

M63
South
1/2 - 1 Mile
Lower

FED USGS **USGS40000457429**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 396	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19700106	Well Depth:	59
Well Depth Units:	ft	Well Hole Depth:	59
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1970-01-06
Feet below surface:	23.70	Feet to sea level:	Not Reported
Note:	Not Reported		

M64
South
1/2 - 1 Mile
Lower

FED USGS **USGS40000457430**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 394	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19691216	Well Depth:	49
Well Depth Units:	ft	Well Hole Depth:	64
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1969-12-16
Feet below surface:	24.90	Feet to sea level:	Not Reported
Note:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

65
East
1/2 - 1 Mile
Lower

FED USGS **USGS40000457832**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-YAW 40	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19521022	Well Depth:	47
Well Depth Units:	ft	Well Hole Depth:	57
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1952-10-22
Feet below surface:	8.80	Feet to sea level:	Not Reported
Note:	Not Reported		

66
SW
1/2 - 1 Mile
Higher

FED USGS **USGS40000457492**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 466-0058	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Outwash	Aquifer Type:	Unconfined single aquifer
Construction Date:	19830830	Well Depth:	58
Well Depth Units:	ft	Well Hole Depth:	80
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1983-08-30
Feet below surface:	25.0	Feet to sea level:	Not Reported
Note:	Not Reported		

M67
South
1/2 - 1 Mile
Lower

FED USGS **USGS40000457412**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-A1W 360	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19540528	Well Depth:	60

Well Depth Units:	ft	Well Hole Depth:	62
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1954-05-28
Feet below surface:	21.50	Feet to sea level:	Not Reported
Note:	Not Reported		

68
ESE
1/2 - 1 Mile
Lower

FED USGS **USGS40000457579**

Organization ID:	USGS-MA		
Organization Name:	USGS Massachusetts Water Science Center		
Monitor Location:	MA-YAW 180	Type:	Well
Description:	Not Reported	HUC:	01090002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Sand and gravel aquifers (glaciated regions)		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19761007	Well Depth:	57
Well Depth Units:	ft	Well Hole Depth:	65
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1976-10-07
Feet below surface:	18.60	Feet to sea level:	Not Reported
Note:	The site had been pumped recently.		

69
NW
1/2 - 1 Mile
Higher

MA WELLS **MA9000000004715**

PWS ID:	Not Reported	Site Name:	Not Reported
Type:	Not Reported	Facility Name:	CAPE COD POTATO CHIPS
SubBasin:	CAPE COD		

Basemap:	DOQ	Accuracy Estimate (ft):	16
Feature Type:	CB	Location Method:	PHO
Primary Location Source:	KNOW	Secondary Location Source:	Not Reported
Tertiary Location Source:	Not Reported	UST ID:	0
Date Mapped:	21-JUL-09		

1G
SSW
1/2 - 1 Mile
Lower

AQUIFLOW **5215**

Site ID:	4-0000027
Groundwater Flow:	Not Reported
Shallowest Water Table Depth:	20
Deepest Water Table Depth:	Not Reported
Date:	5/22/1991

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: MA Radon

Radon Test Results

County	% of sites>4 pCi/L	Median
BARNSTABLE	15	1.6

Federal EPA Radon Zone for BARNSTABLE County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 02601

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	Not Reported	Not Reported	Not Reported	Not Reported
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	1.150 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: MassDEP
Telephone: 617-292-5907

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Massachusetts Geographic Information System (MassGIS) Datalayers
Source: Executive Office of Environmental Affairs
Telephone:

Public Water Supply Database

Telephone:
The Public Water Supply datalayer contains the locations of public community surface and groundwater supply sources and public non-community supply sources as defined in 310 CMR 22.00.

Areas of Critical Environmental Concern

Telephone:
The Areas of Critical Environmental Concern (ACEC) datalayer shows the location of areas that have been designated ACECs by the Secretary of Environmental Affairs. ACEC designation requires greater environmental review of certain kinds of proposed development under state jurisdiction within the ACEC boundaries. The ACEC Program is administered by the Department of Environmental Management (DEM) on behalf of the Secretary of Environmental Affairs. The Massachusetts Coastal Zone Management (MCZM) Office managed the original Coastal ACEC Program from 1978 to 1993, and continues to play a key role in monitoring coastal ACECs. Procedures for ACEC designation and the general policies governing the effects of designation are contained in the ACEC regulations (301 CMR 12.00). The ACEC datalayer has been compiled by MCZM and DEM and includes both coastal and inland areas.

EPA Designated Sole Source Aquifers

Telephone:
The Sole Source Aquifer datalayer was compiled by the Department of Environmental Protection (DEP) Division of Water Supply (DWS). Seven Sole Source Aquifers have been designated by the US Environmental Protection Agency (EPA) for Massachusetts. A Sole Source Aquifer (SSA) is an aquifer designated by US EPA as the sole or principal source of drinking water for a given aquifer service area; that is, an aquifer which is needed to supply 50% or more of the drinking water for that area and for which there are no reasonably available alternative sources should that aquifer become contaminated. The aquifers were defined by an EPA hydrogeologist.

Aquifers

Telephone:
MassGIS produced an aquifer datalayer composed of 20 individual panels, generally based on the boundaries of the major drainage basins. Areas of high and medium yield were mapped. This datalayer includes polygon attribute coding to help in the identification of areas in which cleanup of hazardous waste sites must meet drinking water standards, as defined in the Massachusetts Contingency Plan (MCP) (310 CMR 40.00000).

Non-Potential Drinking Water Source Areas

Telephone:
Non-Potential Drinking Water Source Areas (NPDWSA) are regulatory in nature representing one of many considerations used in determining the standards to which ground water must be cleaned in the event of a release of oil or hazardous material. NPDWSAs are not based on existing water quality and do not indicate poor ambient conditions.

DEP Approved Zone IIs

Telephone:
The Department of Environmental Protection (DEP) approved Zone IIs datalayer was compiled by the DEP Division of Water Supply (DWS). The database contains 281 approved Zone IIs statewide. As stated in 310 CMR 22.02, a Zone II is 'that area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at safe yield, with no recharge from precipitation.) It is bounded by the groundwater divides which result from pumping the well and by the contact of the aquifer with less permeable materials such as till or bedrock. In some cases, streams or lakes may act as recharge boundaries. In all cases, Zone IIs shall extend up gradient to its point of intersection with prevailing hydrogeologic boundaries (a groundwater flow divide, a contact with till or bedrock, or a recharge boundary).' These data are used in association with the Public Water Supplies datalayer. The following describes certain unique features of this association.\n - Any proposed new well which will pump at least 100,000 gallons per day must have a Zone II delineation completed and approved by DEP prior to the well coming on line. \n- Additionally, a new source may not be on-line yet, but other, older wells may fall within its Zone II boundary.\n - Further, existing wells must have a Zone II delineated as a condition of receiving a water withdrawal permit under the Water Management Act.

OTHER STATE DATABASE INFORMATION

RADON

State Database: MA Radon
Source: Department of Health
Telephone: 413-586-7525
Radon Test Results

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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Cape Cod Gateway Airport
480 Barnstable Road
Hyannis, MA 02601

Inquiry Number: 7379392.3
June 30, 2023

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

06/30/23

Site Name:

Cape Cod Gateway Airport
480 Barnstable Road
Hyannis, MA 02601
EDR Inquiry # 7379392.3

Client Name:

GEI Consultants, Inc.
400 Unicorn Park Drive
Woburn, MA 01801
Contact: Christopher M Ragnelli

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by GEI Consultants, Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # E60B-4DC1-9657

PO # 2203788

Project Cape Cod Gateway Airport

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: E60B-4DC1-9657

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- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Cape Cod Gateway Airport
480 Barnstable Road
Hyannis, MA 02601

Inquiry Number: 7379392.4
June 30, 2023

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

06/30/23

Site Name:

Cape Cod Gateway Airport
480 Barnstable Road
Hyannis, MA 02601
EDR Inquiry # 7379392.4

Client Name:

GEI Consultants, Inc.
400 Unicorn Park Drive
Woburn, MA 01801
Contact: Christopher M Ragnelli

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by GEI Consultants, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# 2203788
Project: Cape Cod Gateway Airport

Coordinates:

Latitude:	41.669965 41° 40' 12" North
Longitude:	-70.281853 -70° 16' 55" West
UTM Zone:	Zone 19 North
UTM X Meters:	393292.15
UTM Y Meters:	4613927.54
Elevation:	39.61' above sea level

Maps Provided:

2018	1942
2015	1893
2012	1888
1979	
1977	
1974	
1961	
1950	

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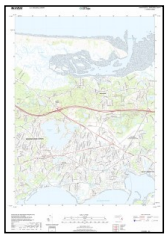
Topo Sheet Key

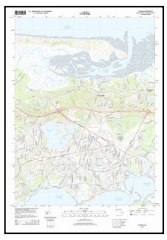
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2018 Source Sheets



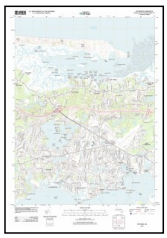
Hyannis
2018
7.5-minute, 24000

2015 Source Sheets



Hyannis
2015
7.5-minute, 24000

2012 Source Sheets



Hyannis
2012
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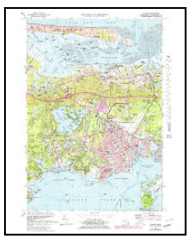
1979 Source Sheets

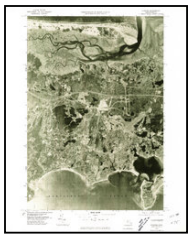


Hyannis
1979
7.5-minute, 25000
Aerial Photo Revised 1977

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1977 Source Sheets

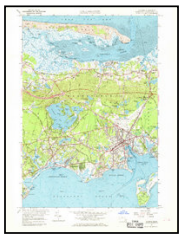


Hyannis
1977
7.5-minute, 25000
Aerial Photo Revised 1977

1974 Source Sheets

Hyannis
1974
7.5-minute, 24000
Aerial Photo Revised 1973

1961 Source Sheets



Hyannis
1961
7.5-minute, 24000

1950 Source Sheets

Hyannis
1950
7.5-minute, 24000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1942 Source Sheets

Hyannis
1942
7.5-minute, 31680

1893 Source Sheets

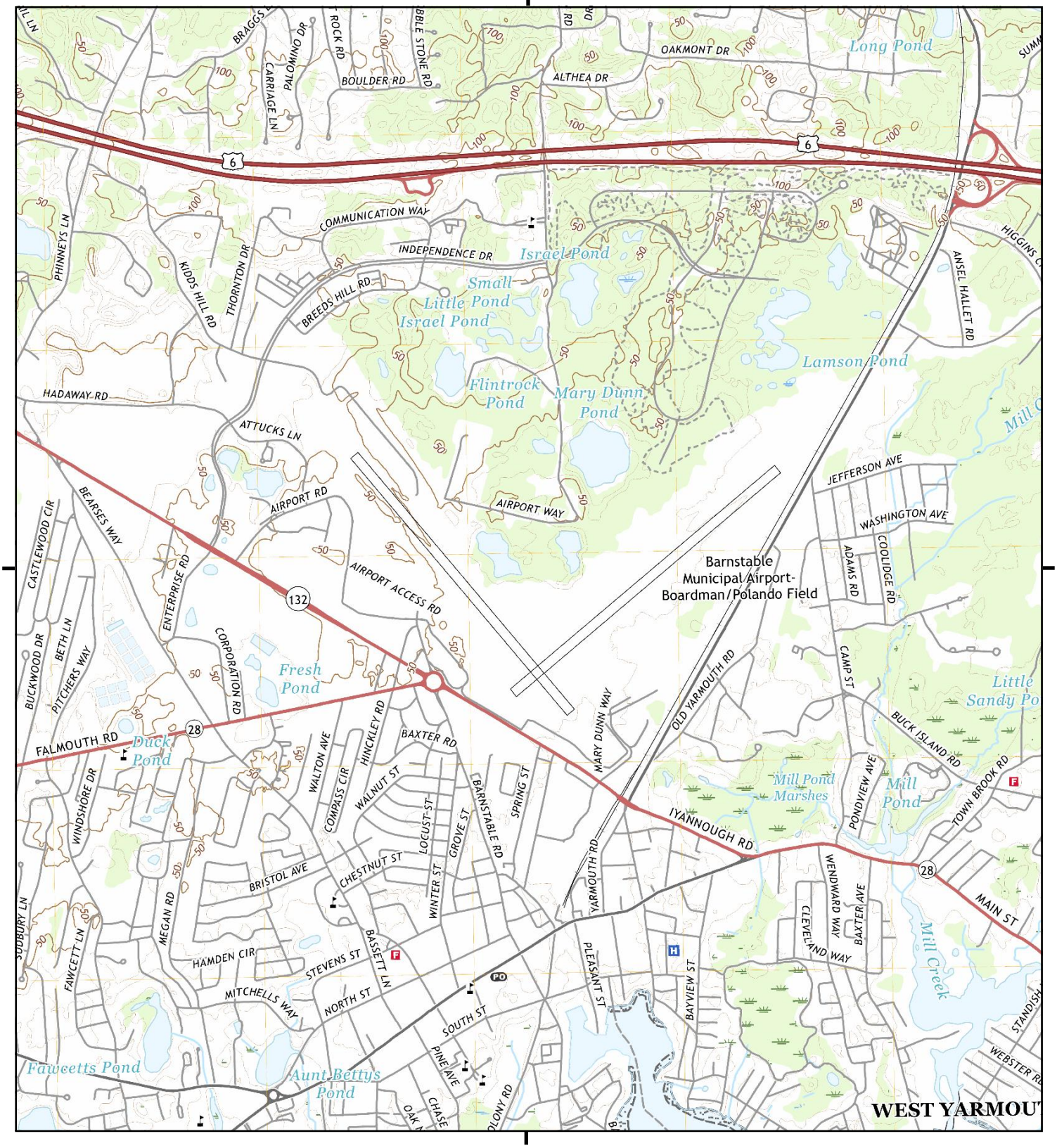
Barnstable
1893
15-minute, 62500

1888 Source Sheets

Barnstable
1888
15-minute, 62500

Historical Topo Map

2018



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

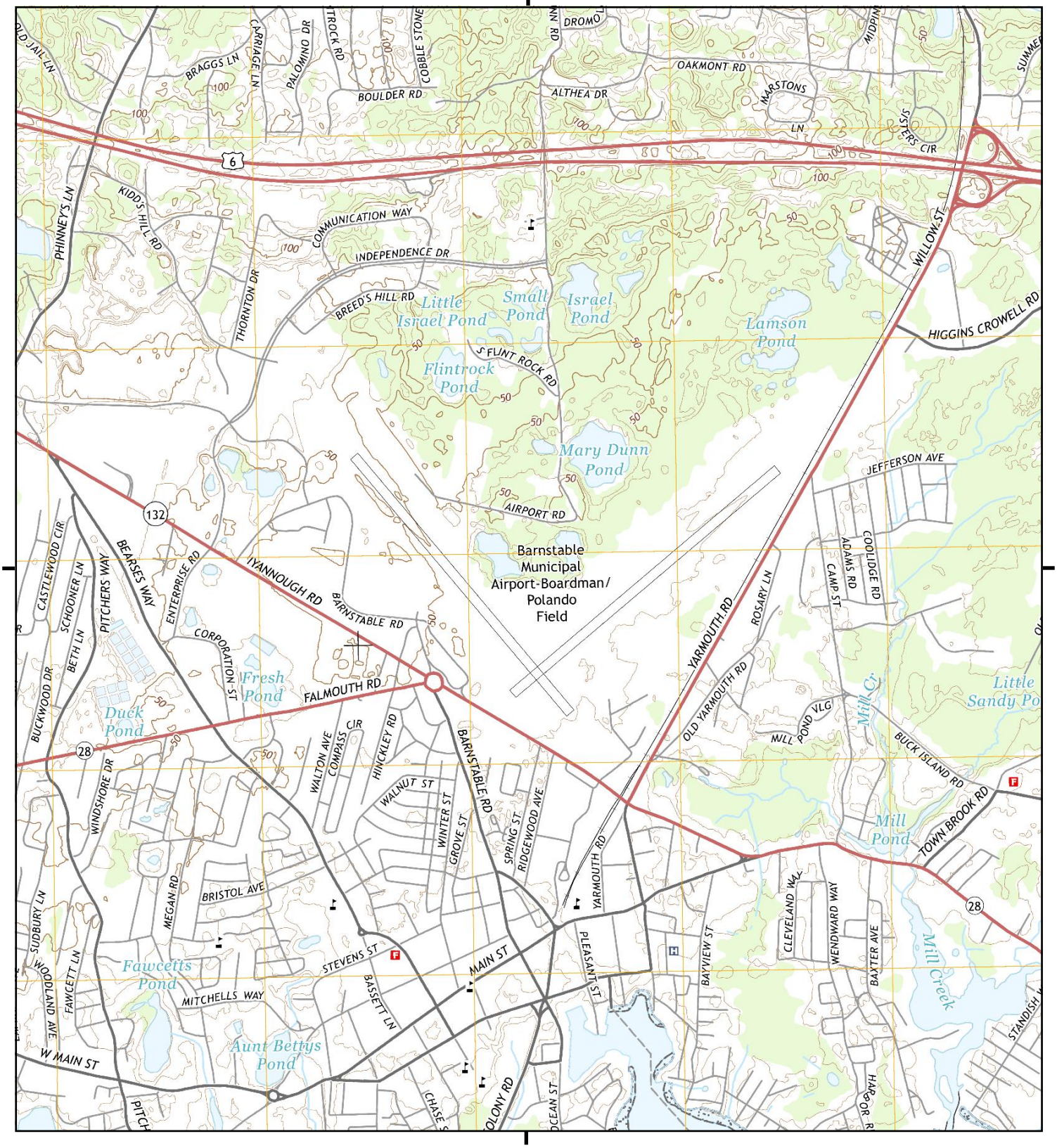
TP, Hyannis, 2018, 7.5-minute

SITE NAME: Cape Cod Gateway Airport
ADDRESS: 480 Barnstable Road
Hyannis, MA 02601
CLIENT: GEI Consultants, Inc.

N

Historical Topo Map

2015



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0 Miles 0.25 0.5 1 1.5

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W E
SW S SE

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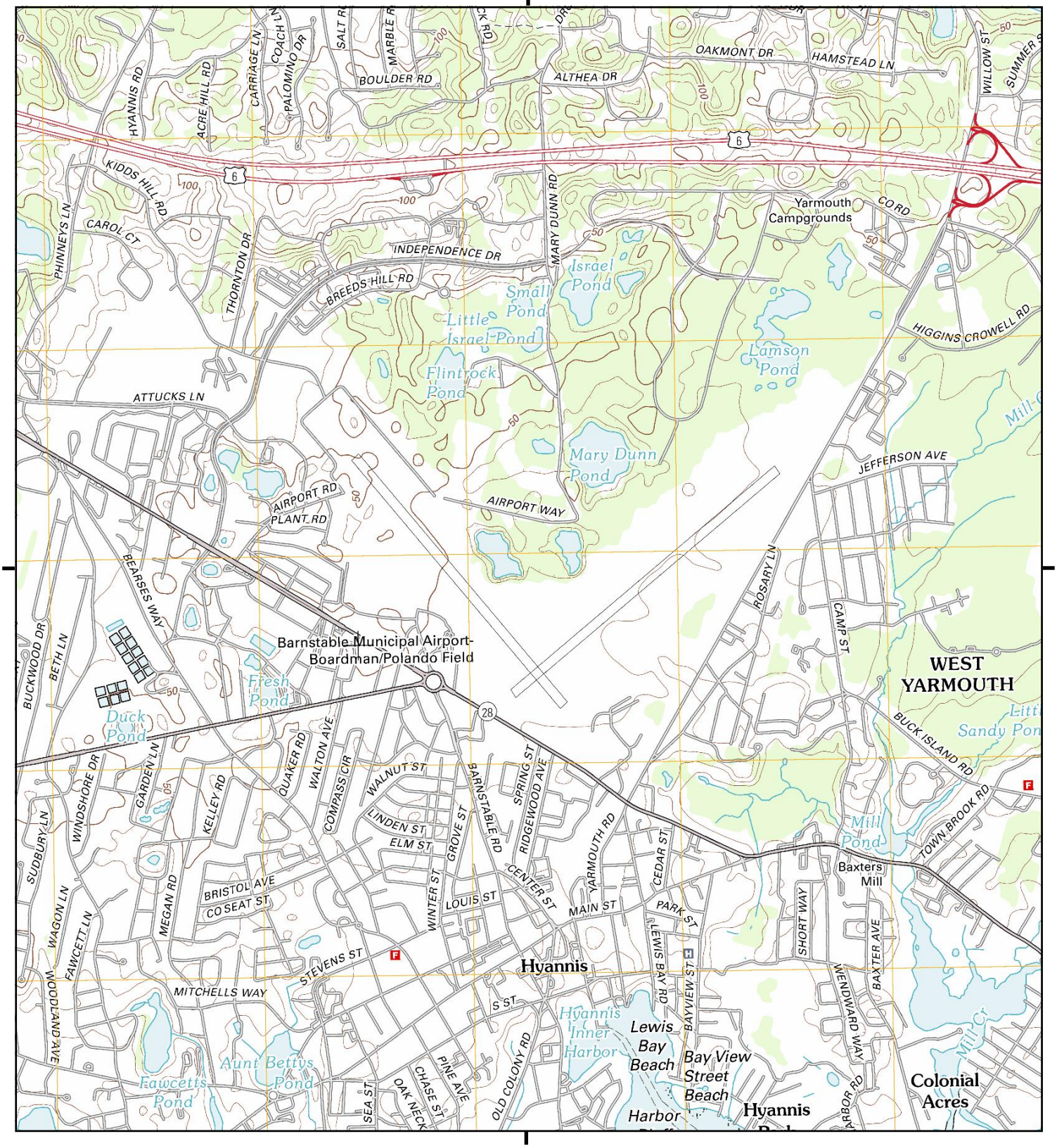
SITE NAME: Cape Cod Gateway Airport
ADDRESS: 480 Barnstable Road
Hyannis, MA 02601
CLIENT: GEI Consultants, Inc.

N

Historical Topo Map

2012



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W E
SW S SE

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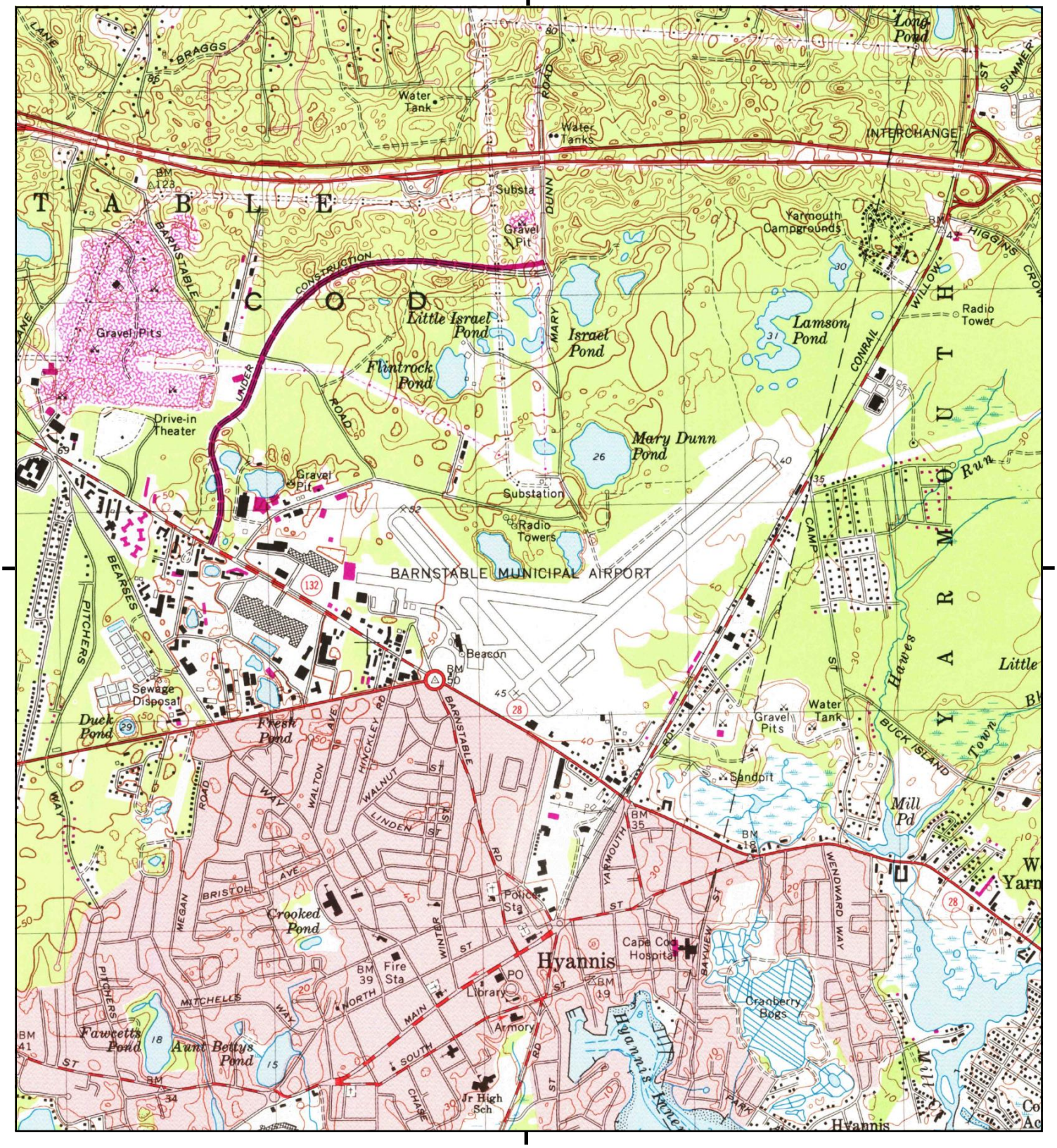
SITE NAME: Cape Cod Gateway Airport
ADDRESS: 480 Barnstable Road
Hyannis, MA 02601
CLIENT: GEI Consultants, Inc.

N



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W E
SW S SE

TP, Hyannis, 1979, 7.5-minute

SITE NAME: Cape Cod Gateway Airport
ADDRESS: 480 Barnstable Road
Hyannis, MA 02601
CLIENT: GEI Consultants, Inc.

N

This report includes information from the following map sheet(s).

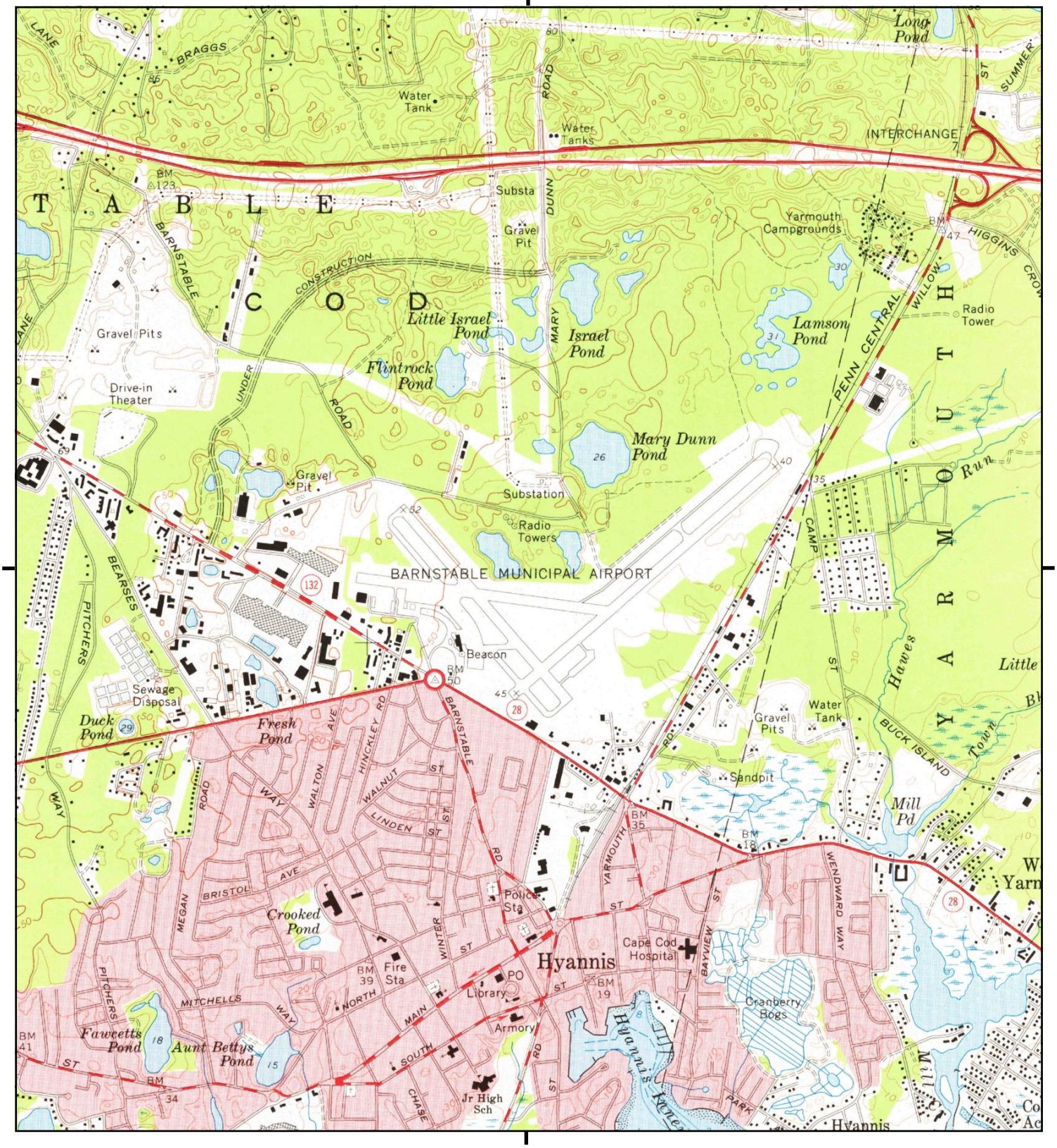
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Hyannis, 1977, 7.5-minute

SITE NAME: Cape Cod Gateway Airport
ADDRESS: 480 Barnstable Road
Hyannis, MA 02601
CLIENT: GEI Consultants, Inc.

N



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NW N NE
W E
SW S SE

TP, Hyannis, 1974, 7.5-minute

SITE NAME: Cape Cod Gateway Airport
ADDRESS: 480 Barnstable Road
Hyannis, MA 02601
CLIENT: GEI Consultants, Inc.

N

This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

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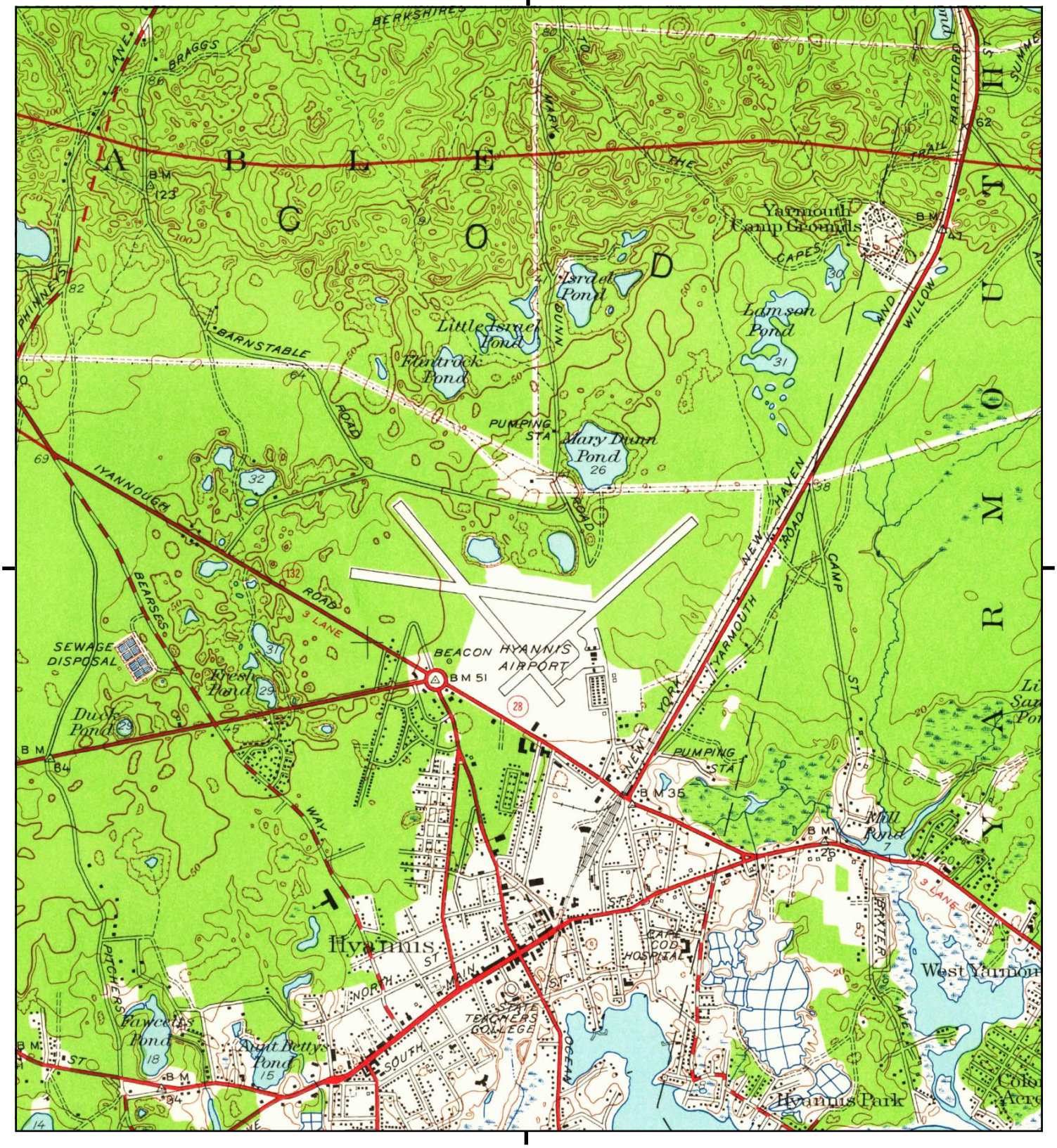
ADDRESS: 480 Barnstable Road
Hyannis, MA 02601
CLIENT: GEI Consultants, Inc.

N



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NW N NE
W E
SW S SE

TP, Hyannis, 1950, 7.5-minute

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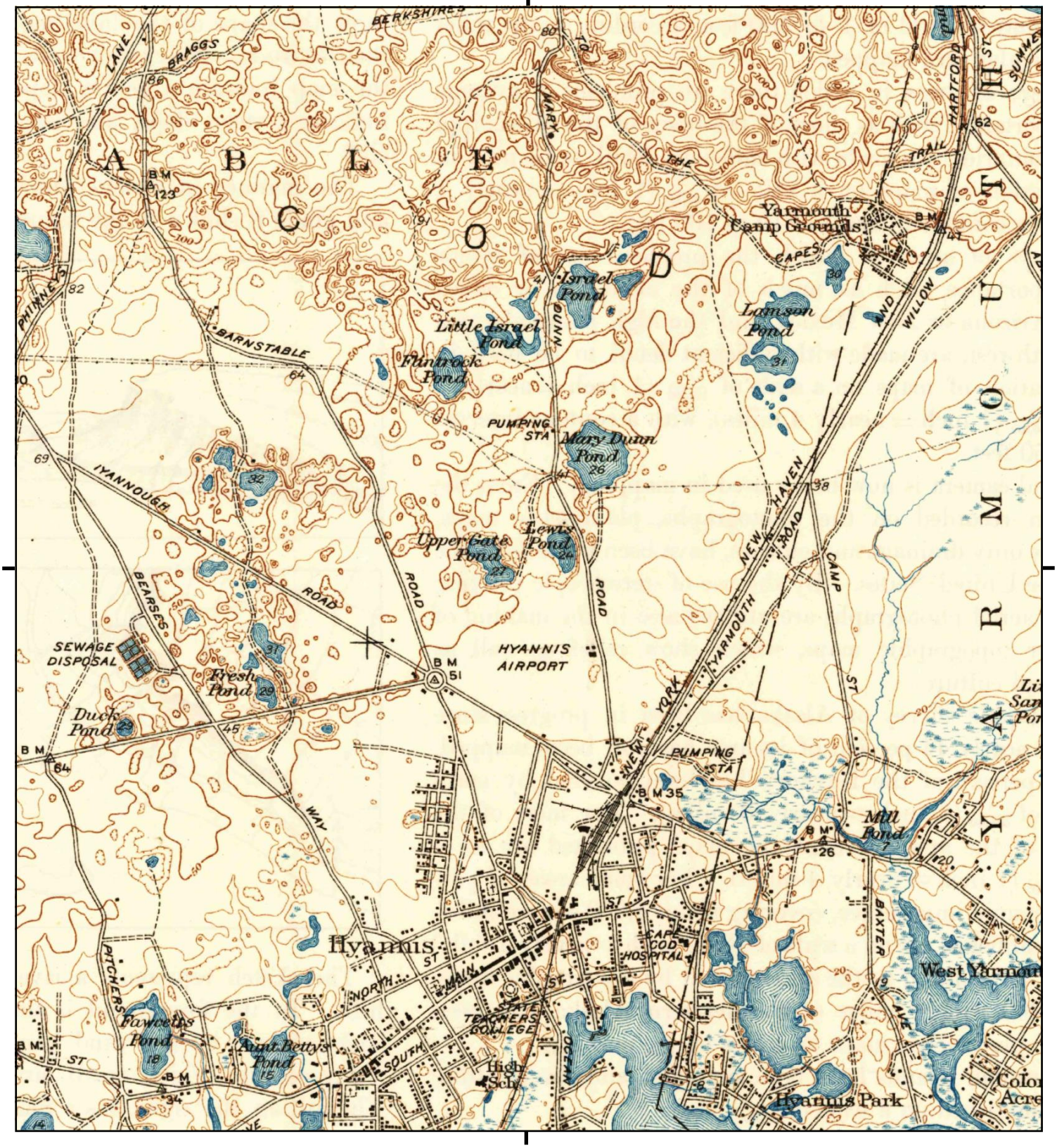
ADDRESS: 480 Barnstable Road
Hyannis, MA 02601
CLIENT: GEI Consultants, Inc.

N



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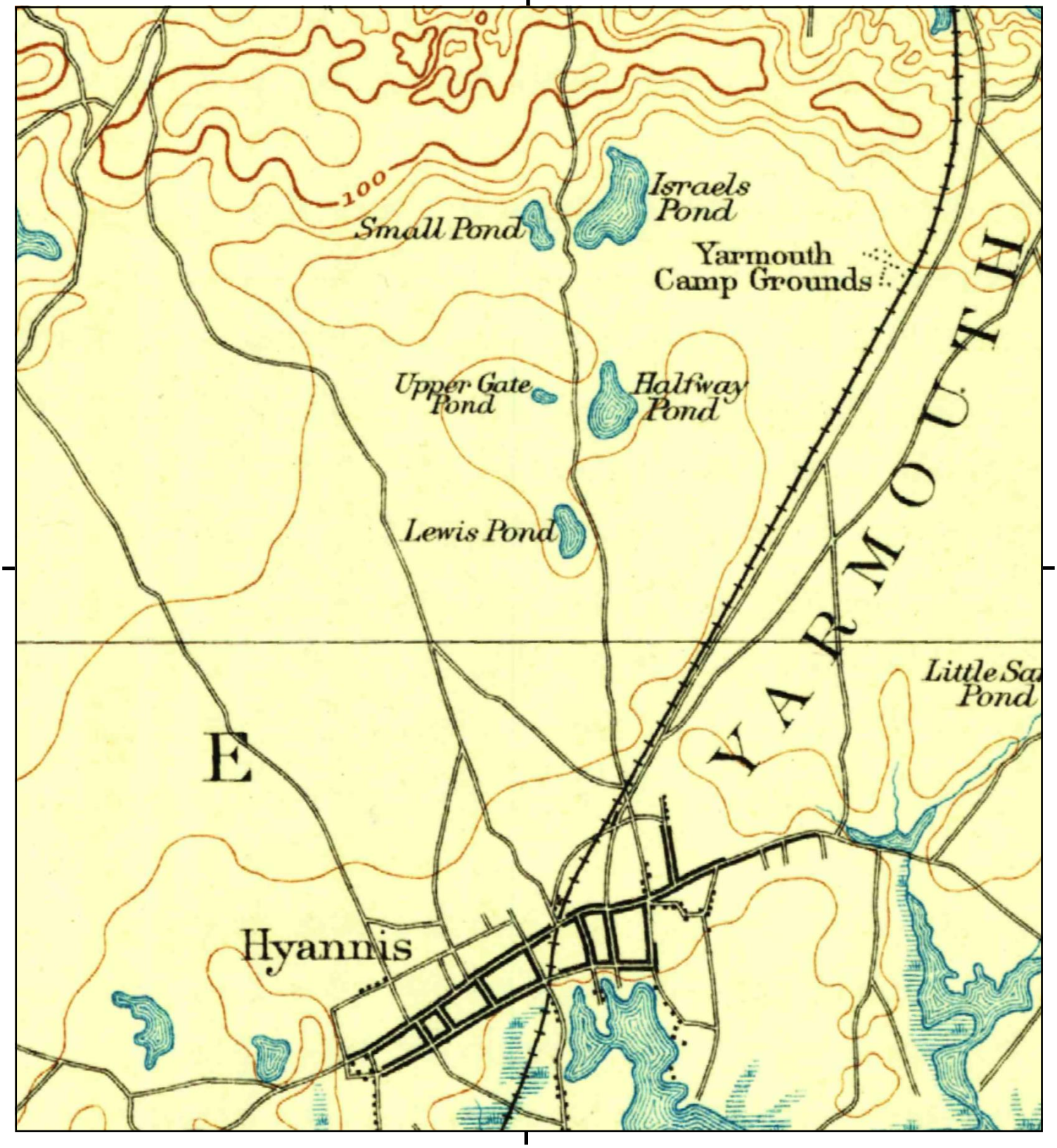
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Hyannis, 1942, 7.5-minute

SITE NAME: Cape Cod Gateway Airport
ADDRESS: 480 Barnstable Road
Hyannis, MA 02601
CLIENT: GEI Consultants, Inc.

N



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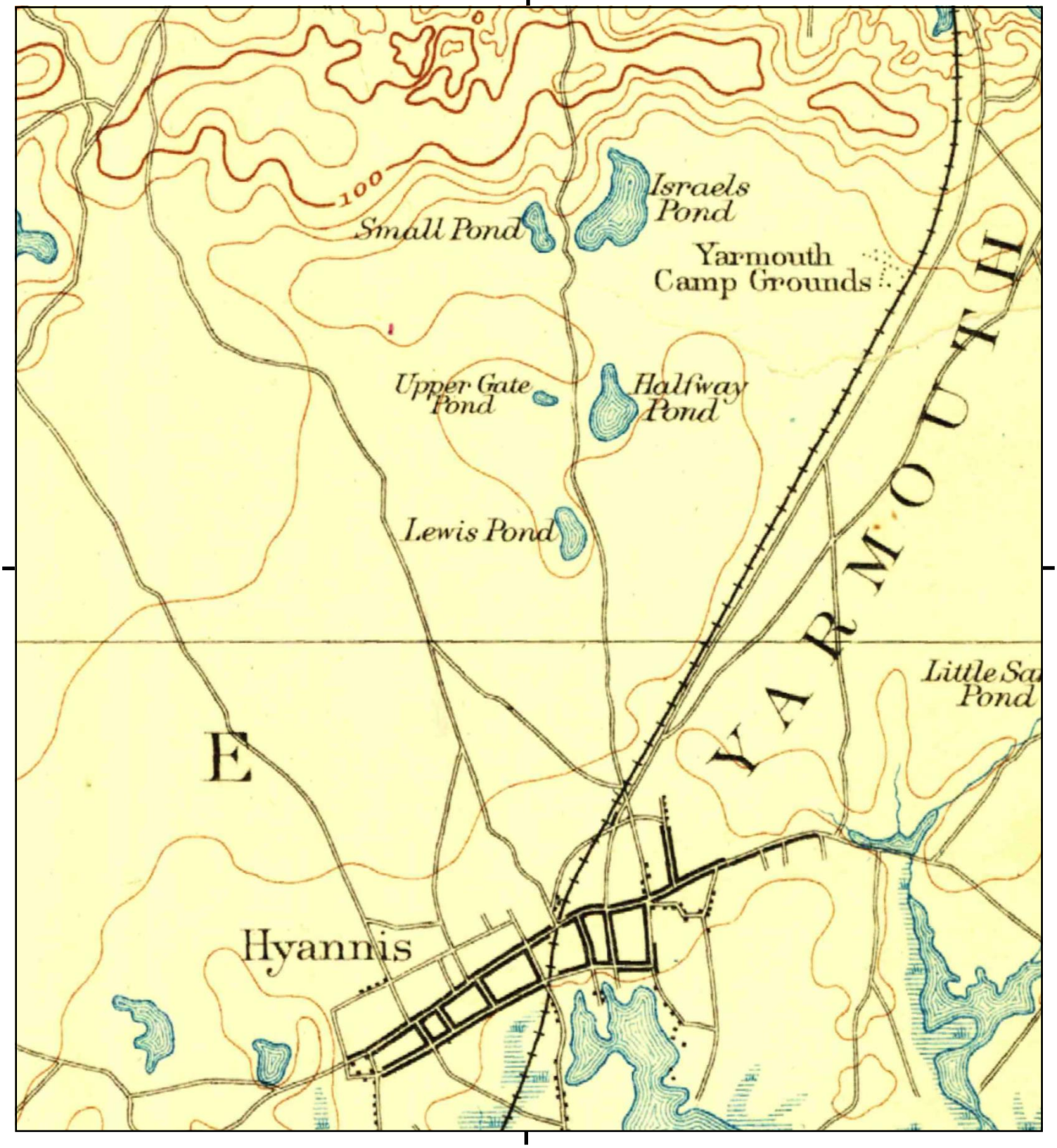
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Barnstable, 1893, 15-minute

SITE NAME: Cape Cod Gateway Airport
ADDRESS: 480 Barnstable Road
Hyannis, MA 02601
CLIENT: GEI Consultants, Inc.

N



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0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Barnstable, 1888, 15-minute

SITE NAME: Cape Cod Gateway Airport
ADDRESS: 480 Barnstable Road
Hyannis, MA 02601
CLIENT: GEI Consultants, Inc.

N

Appendix P

Circulation List

ATTACHMENT P CIRCULATION LIST

Rebecca Tepper, Secretary
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MEPA@mass.gov

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helena.boccadoro@mass.gov

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Southeast Regional Office – Lakeville
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george.zoto@mass.gov
jonathan.hobill@mass.gov

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Boston, MA 02116
MassDOTPPDU@dot.state.ma.us

Massachusetts Department of
Transportation, District #5
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Taunton, MA 02780
Cindy.McConarty@dot.state.ma.us

The Massachusetts Historical Commission
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Boston, MA 02125

MEPA Office
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100 Cambridge Street, Suite 900
Boston, MA 02144
MEPA-EJ@mass.gov

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Boston, MA 02114
paul.ormond@mass.gov

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regulatory@capecodcommission.org

Barnstable Town Council
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367 Main Street
Hyannis, MA, 02601
cynthia.lovell@town.barnstable.ma.us

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Appendix Q

Phase I Report for Upper Gate Pond

Phase I Report and Tier Classification
Upper Gate Pond and Lewis Pond

Cape Cod Gateway Airport
Hyannis, Massachusetts

RTN 4-28577

November 2021

Prepared for:
Cape Cod Gateway Airport
480 Barnstable Road Hyannis,
MA 02840

Prepared by:
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PHASE I REPORT AND TIER CLASSIFICATION

UPPER GATE AND LEWIS PONDS
CAPE COD GATEWAY AIRPORT
HYANNIS, MASSACHUSETTS
RELEASE TRACKING NUMBER 4-28577

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PHASE I REPORT AND TIER CLASSIFICATION
CAPE COD GATEWAY AIRPORT
HYANNIS, MASSACHUSETTS
RELEASE TRACKING NUMBER 4-28577

1.0 INTRODUCTION

The Horsley Witten Group, Inc. (HW) has prepared this Phase I Initial Site Investigation Report (Phase I) and Tier Classification on behalf of the Potentially Responsible Party (PRP), the Cape Cod Gateway Airport (the Airport, formerly the Barnstable Municipal Airport) of Hyannis, Massachusetts (Figure 1). The report was prepared in accordance with the Massachusetts Contingency Plan 310 CMR 40.0000 (MCP) on behalf of:

Ms. Katie Servis, Airport Manager
Cape Cod Gateway Airport
489 Barnstable Road
Hyannis, Massachusetts 02601
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This Phase I focuses on polycyclic aromatic hydrocarbons (PAHs) and lead contamination discovered in sediments within two fresh-water ponds on the northern portion of the Airport property, Upper Gate, and Lewis Ponds (the "Ponds", Figure 1). The contamination detected in the sediments is most likely from stormwater that enters the Ponds from the Airport's stormwater management system. Runoff from a majority of the runways, taxiways, and ramp areas at the Airport is collected and discharged through three outfalls in Upper Gate Pond (Figure 2) and one outfall in Lewis Pond (Figure 3). The stormwater runoff discharged to the Ponds likely contains hydrocarbon and lead contamination associated with the operation of aircraft and motor vehicles at the Airport. It is likely that the operation of these aircraft and vehicles are the source of the PAHs and lead located in the Pond sediments.

The sediments in the Ponds were sampled by HW as part of the North Ramp Phase II Comprehensive Site Assessment (the "Phase II") required for the investigation and remediation of a hydrocarbon and chlorinated solvent plume at Airport (HW, 1997). As the Phase II states, the determination of how to assess the risk and manage the contamination in the Pond sediments was postponed in 1997 pending updated guidance from the Massachusetts Department of Environmental Protection (MassDEP). There were questions about whether or not the sediment contamination was associated with the North Ramp releases or related to typical contaminants found in stormwater runoff from impervious areas that are impacted by aircraft and motor vehicle usage. The remediation of the North Ramp plume was completed in July 2020. At that time, MassDEP agreed to separate the remaining assessment associated with the Ponds and assign a new RTN to this project, in part to assist the Airport with managing the funding

to complete the North Ramp remediation project. Attachment 1 provides an email from Angela Gallagher of the Southeast Regional Office of the MassDEP documenting the separation of the Ponds assessment from the North Ramp project.

A release notification form for the sediment contamination was submitted to MassDEP on October 29, 2020. Since that time, and as described below, HW has evaluated the potential sources of contamination in the Pond sediments and believes it is associated with the operation of the stormwater system which is permitted by the Environmental Protection Agency (EPA) under Multi-Sector General Permit MAR053164 (the "MSGP"). However, additional work is still necessary to confirm that the PAHs and lead are not related to an undocumented release of oil and/or hazardous materials (OHM) into the Airports stormwater system.

As described in Section 8.0 Conceptual Site Model and Phase II Scope of Work, further work is needed to assess the nature and extent of the sediment contamination and confirm that it is not related to an undocumented release of OHM. If this proves to be the case, the Airport will file a Permanent Solution Statement documenting that the sediment contamination is related to anthropogenic background conditions associated with the operation of a stormwater discharge outfall permitted by the EPA under a MSGP.

This Phase I has been prepared in accordance with 310 CMR 40.0480, and the Response Action Performance Standards established in 310 CMR 40.0191. The appropriate MassDEP Bureau of Waste Site Cleanup (BWSC) forms (BWSC 107 and 108) accompanying this Phase I and Tier Classification have been generated through the MassDEP electronic file submission system (eDEP). In accordance with 310 CMR 40.1403(3)e, written notification of the Phase I and Tier classification and a summary of findings and statement of conclusions will also be provided to the Barnstable Town Manager and Board of Health and an advertisement in the local newspaper will announce the availability of the report. The Phase I report has been compiled following the general requirements and format established in 310 CMR 40.0483 *Content of Phase I Report*.

2.0 GENERAL DISPOSAL SITE INFORMATION

2.1 MassDEP Release Tracking Number

The MassDEP Release Tracking Number assigned is 4-28577.

2.2 Disposal Site Location

The disposal sites described in this Phase I (Lewis Pond and Upper Gate Pond) are located at the overall Airport address of 480 Barnstable Road, Hyannis, Massachusetts, 02601. The geographical coordinates for the two Ponds are as follows:

Lewis Pond

World Geodetic System 1984:
Latitude (Y): 41° 40’ 13.62” North
Longitude (X): 70° 17’ 46.06” West

Universal Transverse Mercator (UTM) NAD 1983
Northing (Y): 4613978.70
Easting (X): 393494.23

Upper Gate Pond

World Geodetic System 1984:
Latitude (Y): 41° 40’ 13.08” North
Longitude (X): 70° 17’ 01.01” West

Universal Transverse Mercator (UTM) NAD 1983
Northing (Y): 4613967.13
Easting (X): 393145.19

2.3 MassDEP Priority Resource Locus Map

A Disposal Site Locus Map based on a United States Geological Survey (USGS) topographic map was generated by the Massachusetts DEP BWSC Priority Resource Map online map tool (http://www.mass.gov/eea/agencies/massdep/service/massgis-massdep-priority-resource-maps.html). The Priority Resource Map depicts the 500 foot and 1/2-mile radii from the two ponds (Figure 4).

2.4 Estimate of On-Site Workers at the Disposal Site

The average number of on-site workers at the Airport varies depending upon airfield activities. Airport and tenant workers include office professionals, management, maintenance, FAA tower employees, and other temporary contractors that perform various ongoing maintenance, inspections, and other general activities. There are approximately 25 workers directly employed by the Airport. Tenant workers at the various businesses (e.g., Hertz, Cape Air, Rectrix, FAA) total approximately 400 people at any one day.

2.5 Estimate of Residential Population

According to the 2020 Census Demographic Data Map Viewer, approximately 1,000 to 2,500 people reside within 1/2 mile of the Airport.

2.6 General Description of Surrounding Land Uses

The Airport is located on Barnstable Road, within a densely developed area of Hyannis, Massachusetts. Commercial properties including general offices, retail establishments, and commercial businesses, as well as residential homes, abut the Airport.

2.7 Public Institutions

A general reconnaissance of the properties located within 500 feet of the Airport has not identified any Institutions, defined in 310 CMR 40.006 as "*any public or privately owned hospital, health care facility, orphanage, nursing home, convalescent home, educational facility, or correctional facility, where such facility in whole or in part provides overnight housing.*"

2.8 Natural Resource Areas

According to MassGIS and the MassDEP BWSC Priority Resource Map online map tool, there are several surface waters on or within 500 feet of the Airport, including Upper Gate and Lewis Ponds (Figure 4).

The Airport is located within several MassDEP designated zones of contribution (Zone 2) to municipal supply wells, and within an Environmental Protection Agency (EPA) Medium-Yield Sole Source Aquifer. Due to dense development of the surrounding urban areas, the Airport, and a large portion of the Zone 2 that it is located within, is also designated as Non-Potential Drinking Water Source Area (NPDWSA).

In accordance with 310 CMR 40.0932(4), disposal sites located within a Current Drinking Water Source Area (Zone 2) are designated as GW-1. The MCP Method 1 GW-1 cleanup standards are applicable if any groundwater contamination associated with the Pond sediments is detected. The Airport and downgradient residential properties were confirmed to have municipally supplied drinking water. No private drinking water wells at the Airport or downgradient properties were identified by HW or the Town of Barnstable Department of Public Works, Water Supply Division, and the Town of Yarmouth Health Department, during the Phase I investigation. In addition, testing of select monitoring wells (Figure 5) that are in proximity to the Ponds did not indicate exceedances of the Method 1 GW-1 or GW-3 standards for dissolved RCRA 8 metals or PAHs. Tabulated groundwater analytical data is included on Table 1 and the monitoring well locations are included on Figure 5.

According to MassGIS and the MassDEP BWSC Priority Resource Map online map tool, there is area of priority habitat for rare and endangered species surrounding Lewis Pond. There is also a priority habitat for rare or endangered species located approximately 500 feet north of the Airport boundary near Mary Dunn Pond.

3.0 DISPOSAL SITE MAP

In accordance with 310 CMR 40.0483(1)b, a disposal site map is included as Figure 2 and 3. The disposal site (as currently known) is bound by the edge of the Ponds (the shoreline) as depicted on the attached figures.

4.0 DISPOSAL SITE HISTORY

4.1 Site Ownership and Improvements

The Airport is located in Hyannis, Massachusetts, and provides scheduled airline service and general aviation services and other aviation related activities. The Airport is currently owned by the Town of Barnstable and is operated through the Cape Cod Gateway Airport Commission. The Airport began as a private airport consisting of a single grass runway before being given to the Town of Barnstable in the 1930's. During the 1940's, the U.S. Navy used the Airport and expanded the airfield to include three runways. In 1946, the Airport was returned to use as a two-runway municipal airport (each runway has a designation at each end, being 15-33 and 6-24).

The Airport is comprised of approximately 645 acres of land, with approximately 140 acres that are impervious (e.g., paved areas such as parking lots, runways, concrete walkways, and building rooftops). The Airport's structures include the main terminal and the Air Traffic Control Tower (ATCT), which are located south of the runways and taxiways, as well as several hangars used for general aviation services. The terminal includes office space for Airport employees, ticketing counters for airlines, service counters for auto rental agencies, a restaurant, a retail/art store, space for the TSA, and a general lobby and passenger queuing area. The Airport is located in an area of Hyannis zoned for Business and Industrial uses.

The general aviation facilities are managed primarily by private companies who lease portions of the Airport property. Daily operations typically include a variety of activities from private aircraft flights and charter services, flight school operations, aircraft maintenance and storage, refueling of aircraft, and other aviation related actions. The Airport provides vehicle parking at a main lot located directly in front of the terminal as well as at other locations proximate to hangars across the airport. The Airport is currently served by electric power, telephone, natural gas, municipal sewer, and a few individual septic systems for hangars on the north end of the East Ramp area.

The stormwater from most of the 142 acres of impervious areas at the airport is collected and sent through a series of drainpipes that flow towards either Upper Gate or Lewis Pond (See Airport Drainage Map, Figure 6). The pipes that channel flow to the Ponds are open jointed pipes, meaning that some of the stormwater, especially from smaller rain events, infiltrates into the ground before it flows all the way to the outfalls at the Ponds. There are four outfalls to the Ponds; three that discharge to Upper Gate

Pond and one that discharges to Lewis Pond. These outfalls have been in use for over 40 years, and possibly since the runways were reconfigured in 1946 as mentioned above. Further research is needed to confirm the age of the outfalls.

Since 2011, 100% of the stormwater discharging to the ponds has been treated by Vortechs® hydrodynamic separators. Calculated total suspended solid (TSS) removal rates for these water quality units range from 81% to 87% with total petroleum hydrocarbon (TPH) removal at 67%.

4.2 Hazardous Materials Use and Storage

During its normal daily operations, the Airport accepts, stores, handles and transfers a variety of OHM, similar to most other airports and similar industries. Daily operations include refueling and maintenance of vehicles and aircraft that require a certain level of OHM storage and use. Over the past 20 years, it has been a priority of the Airport management to implement many OHM use reductions, improvements, and storage and training guidelines, as well as infrastructure improvements, such as the installation of the Vortechs stormwater treatment units adjacent to Upper Gate and Lewis Ponds that continue to reduce the risk of impacts to environmental receptors at the Airport. Consistent with the requirements of the EPA, the Airport also maintains a Spill Prevention, Control, and Countermeasure Plan (SPCCP) to reduce the potential for a release of OHM to the environment. The SPCCP was last updated in April 2020. Refer to Figure 7 for OHM storage locations at the Airport. No OHM is stored in proximity to the Ponds.

4.3 Site Utilities

The Airport and its various buildings, terminal and hangars include connections to municipal water, sewer, natural gas, cable, fiber, and stormwater facilities. Some hangars along the northern most section of the east ramp have on-site septic systems. The Airport has an overall Stormwater Pollution Prevention Plan (SWPPP) and associated drainage utility map that is updated regularly (Figure 7). Stormwater runoff either infiltrates directly into the sandy soils or is conveyed to other infiltration treatment units (e.g., Vortechs, raingardens, naturalized depressions, leaching catch basins) prior to discharge to the ground or into the Ponds. The SWPPP was last updated in January 2021 and was prepared in accordance with the requirements for the EPAs National Pollutant Discharge Elimination System (NPDES) MSGP. As changes to runways, taxiways, and other infrastructure are made, the SWPPP is updated, reviewed, and approved by Airport Management.

As discussed above, both Upper Gate and Lewis Ponds receive stormwater during larger rain events from the runways, taxiways, and ramp areas at the Airport. Figure 6 provides an overview of the drainage areas that contribute to the Ponds. Both aircraft and associated service vehicles operate in the paved areas that drain to the ponds.

Therefore, the runoff from these areas likely includes hydrocarbons and lead related to aircraft and vehicle engine exhaust. It also most likely includes de minimis amounts of aviation fuel released due to aircraft tank expansion venting. stormwater outfalls were in place prior to 1996, so lead from service vehicles using leaded gas could have contributed a portion of the lead found in the pond sediments before then when leaded gas was still used in vehicles. Aviation fuels still includes lead, so this is a continuing source in the stormwater runoff.

4.4 Floor Drains

According to the Phase II for the North Ramp (HW, 1997, RTN 4-823) two floor drains were historically located in a garage to the east of Griffin Aviation (Building 2B, Figure 8) and one floor drain was located in the former operations building (Building 8, Figure 8) that were connected to catch basins that discharged to Upper Gate Pond. Additional research of these floor drains and what activities were historically conducted in the buildings is proposed as part of the Phase II scope of work for the Ponds described below.

4.5 Wastewater Disposal

The previous airport terminal was connected to the municipal sewer for decades, prior to its demolition. The current terminal building has always been connected to the municipal sewer. The Airport Rescue and Fire Fighting (ARFF) building has also been connected to town sewer since its construction in 1998. All wastewater generated from these and most of the hangars (with the exception of select east ramp hangers) at the Airport are discharged to the Town of Barnstable Water Pollution Control Facility (WPCF) located on Bearse's Way, Hyannis, Massachusetts.

4.6 Release History

The sediments in the Ponds were originally tested by HW in 1997 as part of the Phase II for the North Ramp hydrocarbon and solvent plume (HW, 1997, RTN 4-823). There was concern at that time that activities associated with that release may have contributed contamination to the stormwater management facilities at the Airport and that the contamination may have migrated to the two ponds.

Since that time, further evaluations of the releases associated with the North Ramp have been conducted and it was determined there was limited opportunity for the sources of the releases managed on the North Ramp to enter the stormwater facilities and discharge to the two Ponds. The primary cause of the release at the North Ramp was from floor drains that discharged to leach pits either directly or through an oil/water separator connected to a leaching pit.

As such, it is possible that the contamination associated with the Pond sediments is related to exhaust emissions from aircraft and support vehicles at the Airport and related to de minimis amounts of aviation fuel released from aircraft tank pressure venting systems during takeoff. Further investigation of the source of release is proposed as part of the Ponds Phase II scope of work described below.

4.7 Environmental Permits and Compliance History

- The Airport is designated as a Small Quantity Generator (SQG) of hazardous materials and is identified as Generator ID MAC300009198. An EPA MSGP (MAR053164) has been issued for the Airport allowing stormwater discharges to Upper Gate Pond and Lewis Pond as waters of the US.
- The hydrocarbon and solvent plume associated with the North Ramp at the Airport was a "release site" under RTN 4-0823 since the mid 1990's until it was closed out in 2020. At that point, MassDEP agreed to separate the work needed to address the sediment in the Ponds.
- Separate from the North Ramp plume remediation, MassDEP issued a Notice of Responsibility requiring an Immediate Response Action on November 10, 2016 to the Airport to address potential contamination associated with 1,4-dioxane and per and polyfluoroalkyl substances (PFAS). A Phase II Comprehensive Site Assessment was submitted addressing these contaminants in March 2021 (HW, 2021, RTN 4-26347). Further work on this RTN is ongoing.
- In April 2021, a plane crash occurred within an unpaved portion of the Airport that resulted in a release of approximately 16 gallons of aviation gas and three gallons of motor oil. The release was confined to surface soils and did not enter the storm drainage system. Impacted soils were excavated and disposed of off-site and post excavation soil samples were collected. A Permanent Solution Statement for the release (RTN 4-28769) was submitted to the MassDEP in June 2021.
- In November 2019, a release of 51 gallons of jet-A fuel occurred at the Gate F Fuel Farm from a hand operated pump located within the concrete secondary containment structure. The hand pump was not fully closed after the previous use and was the source of the release. Due to a storm drainage valve being opened, the release drained from the secondary containment structure into an O/WS. Airport personnel responded to the spill and applied absorbents. Airport personnel notified the fire department and the MassDEP within two hours of identifying the release. Clean Harbors and HW responded to the release and pumped out and cleaned the O/WS, recovered absorbents, and cleaned the interior of the concrete secondary structure with a citrus based degreaser. The release was contained by the concrete secondary containment and the OW/S and there was no discharge of pollutants to stormwater and/or surface waters.

Since the release was contained to secondary containment, the RTN was retracted.

- In July 2016, a plane crash occurred within a paved portion of the Airport that resulted in a release of approximately 30 gallons of aviation gas. AFFF was used to prevent the ignition of the fuel. A majority of the release was confined to absorbents placed on the asphalt surface. Some of the materials entered the concrete catch basin but did not make it out of the catch basin. OHM impacted absorbents along with standing water and sediments from the catch basin were removed with a vacuum truck for off-site disposal. A Permanent Solution Statement for the release (RTN 4-26225) was submitted to the MassDEP in September 2016.
- In September 2016, a release of jet-A fuel was encountered during the removal of underground storage tanks at the site. Impacted soils were excavated and post excavation soil samples were collected. A Permanent Solution Statement for the release (RTN 4-26358) was submitted to the MassDEP in November 2016.
- In August 2011, a release of approximately 15 gallons of jet-A fuel occurred to the paved ground surface during a refueling operation. Absorbents were placed and then collected for off-site disposal. A Class A-1 Response Action Outcome for the release (RTN 4-23484) was submitted to the MassDEP in October 2011.
- In March 2008, the Airport purchased the approximate six-acre Blackburn Auto Salvage property. As part of the purchase, the former owner was required to clean up the property consistent with the MCP by October 2008. As part of the cleanup, approximately 4,000 cubic yards of impacted soil was removed and disposed of off-site. Post excavation soil and groundwater samples were subsequently collected. A Class A-2 Response Action Outcome for the release (RTN 4-01081) was submitted to the MassDEP in October 2008.
- In June 2008, a plane crash occurred at the northeast end of Runway 6/24 within an unpaved portion of the Airport that resulted in a release of approximately 160 gallons of Jet A fuel. The release was confined to surface soils. Impacted soils were excavated and disposed of off-site and post excavation soil samples were collected. A Class A-2 Response Action Outcome for the release (RTN 4-21315) was submitted to the MassDEP in August 2008.
- In July 2000, a release of approximately 25 gallons of jet-A fuel occurred to portions of the paved ground surface during a refueling operation. None of the spilled fuel entered the storm drainage system. Absorbents were used to recover the spilled fuel and were placed in a 55-gallon drum for future off-site disposal. A Class A-1 Response Action Outcome for the release (RTN 4-14860) was submitted to the MassDEP in September 2000.
- In August 2000, a release of approximately 37 gallons of aviation gas occurred to portions of the paved and unpaved ground surface during a refueling operation.

The fuel also entered a catch basin. It was determined that the fuel was retained in the catch basin and did not migrate into the stormwater system. Impacted soil and catch basin liquids and sediment were removed with a vacuum excavator for off-site disposal. Soil and groundwater samples were subsequently collected for laboratory analysis. A Class A-1 Response Action Outcome for the release (RTN 4-15715) was submitted to the MassDEP in May 2002.

- On January 23, 1999, a plane crash occurred within an unpaved portion of the Airport that resulted in a release of approximately 10 to 20 gallons of Jet-A fuel. The release was confined to surface soils. Impacted soils were excavated and disposed of off-site and post excavation soil samples were collected. A Class A-2 Response Action Outcome for the release (RTN 4-14472) was submitted to the MassDEP in September 1999.
- In July 1999, a release of 10 to 20 gallons of low lead aviation gas occurred to portions of the paved and unpaved ground surface from an overfilled tanker truck. A majority of the fuel was reported to have impacted surrounding soils but approximately one to two gallons entered a storm drain. Approximately one cubic yard of soil was removed from the catch basin and three cubic yards from impacted surface soils. Post excavation soil samples were collected. Impacted soils were excavated and post excavation soil samples were collected. A Class A-2 Response Action Outcome for the release (RTN 4-14860) was submitted to the MassDEP in June 2021.

5.0 SUBSURFACE INVESTIGATION ACTIVITES COMPLETED TO DATE

A number of investigations have been conducted to evaluate the presence of OHM in the sediments found on the bottom of the Ponds. The field work conducted to date by HW and others includes the following:

In 2001, Baystate Environmental Associates tested the sediment in Upper Gate and Lewis Pond as well as two reference ponds, Mary Dunn Pond located in a relatively undeveloped area north of the Airport, and Fresh Pond located adjacent to the Cape Cod Mall near the Airport. Fresh Pond represents another pond impacted by runoff from parking and road areas near the mall and is an example of a stormwater pond likely impacted by contamination that would be considered anthropogenic background. The testing was done as part of an environmental assessment conducted to evaluate locating the new airport terminal on the north side of the Airport. Further sediment testing was conducted by HW in 2001, 2004, 2005, 2011 and 2021 for PAHs and lead. The results of these assessments are provided in Tables 2 through 6. Historic surface water testing is included on Table 7 and groundwater testing is included in Table 1. Locations of pre-2021 sampling locations (if available) are included on Figures 2, 3, 7, 9,10 and 11.

6.0 NATURE AND EXTENT OF CONTAMINATION

Based on available data, the contamination detected in the Pond sediments have not significantly impacted groundwater. There are no surface water outlets from the ponds so this is not a means for which contaminants could migrate. It appears the PAHs and lead in the sediments is anthropogenic background, however, further evaluation of potential releases that could have been transported to the Ponds through the stormwater infrastructure is needed to confirm this. Historic surface water testing indicates that dissolved lead in the Ponds is consistent with the background sampling location (Mary Dunn Pond, Table 7).

7.0 MIGRATION PATHWAYS AND EXPOSURE POTENTIAL

In accordance with 310 CMR 40.0483(f), Phase I reports shall describe and evaluate known and potential contaminant migration pathways and exposure points, to the extent that such information is known.

As mentioned above, the ponds have no surface water outlet so no contamination can leave them through a stream. Historic groundwater testing does not indicate lead or PAHs above the applicable Method 1 standards. As such, the impacts appear to be isolated to the Pond sediments. Additionally, the Ponds are located within a secured fenced area of the Airport reducing exposure to the general public.

8.0 CONCEPTUAL SITE MODEL AND PHASE II SCOPE OF WORK

Assessment activities conducted to date have been completed for this Phase I Report. Data collected to date provides initial information to develop a Conceptual Site Model (CSM) for planning a Phase II Comprehensive Site Assessment (CSA) in accordance with 310 CMR 40.0830. The Tier Classification submittal criteria require the preparation of a Phase II CSA scope of work or conceptual scope or work. Additional details are set forth below.

8.1 Conceptual Site Model

The purpose of this investigation is to evaluate the nature and extent of the release(s) including potential sources of PAHs and lead in the Pond sediments. With the exception of the three floor drains discussed above, there are no known sources of these contaminants other than the stormwater that enters the Ponds from the paved areas of the airport. This stormwater likely contains PAHs and lead associated with aircraft and vehicle exhaust emissions and from the release of aromatic hydrocarbons through the vapor release valves associated with the aircraft fuel tanks.

However, further research is needed to fully document that the historic floor drains were not a source of contamination to the ponds through the Airport stormwater system. HW will need to review plans, closure reports and designs for these buildings and work with Airport staff to confirm what types of work was completed in these buildings. HW will also conduct further evaluation of similar Ponds receiving stormwater from larger impervious areas to help further evaluate if it is appropriate to consider the PAHs and lead as anthropogenic background. If so, the site can be closed out without further assessment under the MCP.

8.2 Phase II Scope of Work

The Scope of Work for the Phase II Assessment will include the following tasks completed consistent with the timeline required by MassDEP:

- Evaluation of historical records and past reports to determine activities conducted within the buildings with floor drains that discharged to the stormwater system.
- Collection of analytical samples from the Vortex Units to determine if the units are removing PAHs and lead in similar concentrations to those found in the Ponds. The Vortex Units were installed after the closure of the floor drains.
- Selection and sampling of 1-2 ponds that are suitable reference ponds for evaluating anthropogenic background conditions associated with runoff from large areas of impervious surface where motor vehicles could generate waste that enters the ponds in stormwater. Fresh Pond, sampled in 2001 may be one of the ponds included in this assessment.
- If it appears that the former floor drains may have affected the Ponds, HW will collect water quality data as necessary to determine if it has been impacted by PAHs or lead.
- Also, if the contamination is not associated with anthropogenic background, then an ecological risk assessment will be conducted to evaluate if the presence of the PAHs and lead pose a risk to the ecosystems associated with the ponds.
- Phase II CSA and Risk Evaluation will be prepared to document information obtained as a result of any additional CSA activities and reference and incorporate the elements of this Phase I Report, and may be combined with a Phase III Remedial Action Plan. The Phase II CSA Completion Report and Phase III Remedial Action Plan will be prepared and submitted prior to the initiation of any Comprehensive Response Actions if they are warranted. If the site can be shown to be related to anthropogenic background conditions, then a Permanent Solution Statement will be submitted.

9.0 TIER CLASSIFICATION

Tier Classification is required for all disposal sites where Comprehensive Response Actions are necessary and is intended to establish an appropriate level of MassDEP oversight for those response actions. The Tier Classification process consists of:

- Completion of a Phase I Initial Site Investigation Report in accordance with 310 CMR 40.0480;
- Comparison of conditions at the disposal site with the Tier I Criteria in 310 CMR 40.0520(2);
- Preparation and filing of a Tier Classification submittal; and
- Public involvement activities.

In accordance with 310 CMR 40.0520(4), the Site is designated as a Tier II disposal site. The contamination detected in the ponds' sediments have not impacted groundwater quality below and downgradient of the ponds. There is no imminent hazard associated with the ponds sediment contamination and there is no Immediate Response Action associated with the site.

Revisions to 310 CMR 40.000 that took effect on April 25, 2014, eliminate the requirement to submit an Initial Tier I Permit Application, Numerical Ranking System score sheet, or Tier I Permit Application fee.

9.1 Response Action Deadlines for Tier I Disposal Sites

Response action deadlines and requirements for Tier I disposal sites are described in 310 CMR 40.0560, and are as follows:

- A Phase II Comprehensive Site Investigation Report and a Phase III Remedial Action Plan shall be submitted within 3 years of the effective date of initial Tier Classification.
- A Phase IV Remedial Implementation Plan shall be submitted within 4 years of the effective date of initial Tier Classification.
- A Response Action Outcome shall be achieved at the Site within 5 years of the effective date of initial Tier Classification.

9.2 Tier Classification Public Notification

Within seven days of filing a Tier Classification Submittal, a legal notice must be published in a local newspaper pursuant to 310 CMR 40.1403(2)b. At least three days prior to public notification, copies of cover letters and notices shall be forwarded to the

Barnstable Chief Municipal Officers and Board of Health. Copies of all public notices will be provided to MassDEP in accordance with 310 CMR 40.1403(2)(c)1.

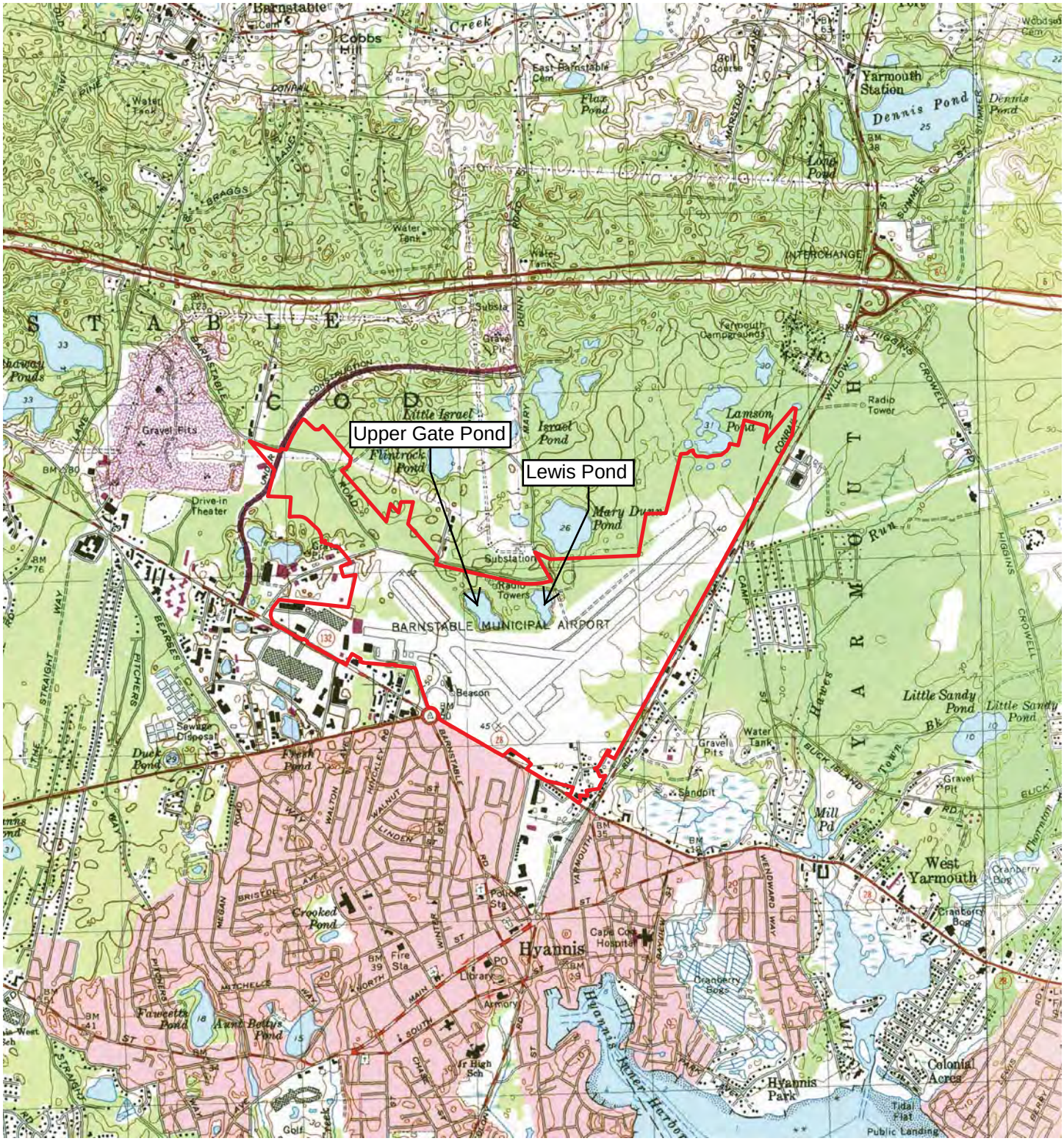
10.0 CONCLUSIONS

This report has been prepared in response to the discovery of PAHs and lead in surficial sediments at concentrations above the Sediment Screening Criteria within Upper Gate and Lewis Ponds.

At this time, a Permanent Solution Statement cannot be issued, as there is insufficient data to confirm their presence is an anthropogenic background condition and contaminant concentrations remain above the Sediment Screening Criteria for sediments below the Ponds. Therefore, in accordance with 310 CMR 40.0800, HW has determined that Comprehensive Response Actions are necessary at the Site. Required Comprehensive Response Actions and associated timelines are described in Section 9.1.

FIGURES

1 - USGS Locus Map
2- Upper Gate Pond 2021 Sample Locations
3 - Lewis Pond 2021 Sample Locations
4 - Priority Resource Map
5 - Monitoring Well Locations
6 - Drainage Map
7 - OHM Storage Map
8 - Historic Drainage Map
9 - Sampling Locations Marry Dunn Pond
10 - Historic Sampling Locations Lewis Pond
11 - Historic Sampling Locations Marry Dunn Pond
12 - Historic Sampling Locations Upper Gate Pond



Document Path: H:\Projects\HYA\11072 (697 Barnstable Airport)\GIS_Maps\Maps\USGS_Locus_20130815.mxd

Legend

Airport Property Line

*Hyannis Topographic Quadrangle

N

0.5 Miles

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USGS Locus Map
Cape Cod Gateway Airport
Hyannis, MA

Date: 4/17/2018

Figure 1

Legend

- Barnstable Municipal Airport Property Boundary
- Surface Water and disposal site boundary
- 08/06/2021 Sediment Sampling Locations
- Stormwater Outfalls

*Source: Barnstable GIS
** All sediment sampling locations are approximate

N

120 Feet

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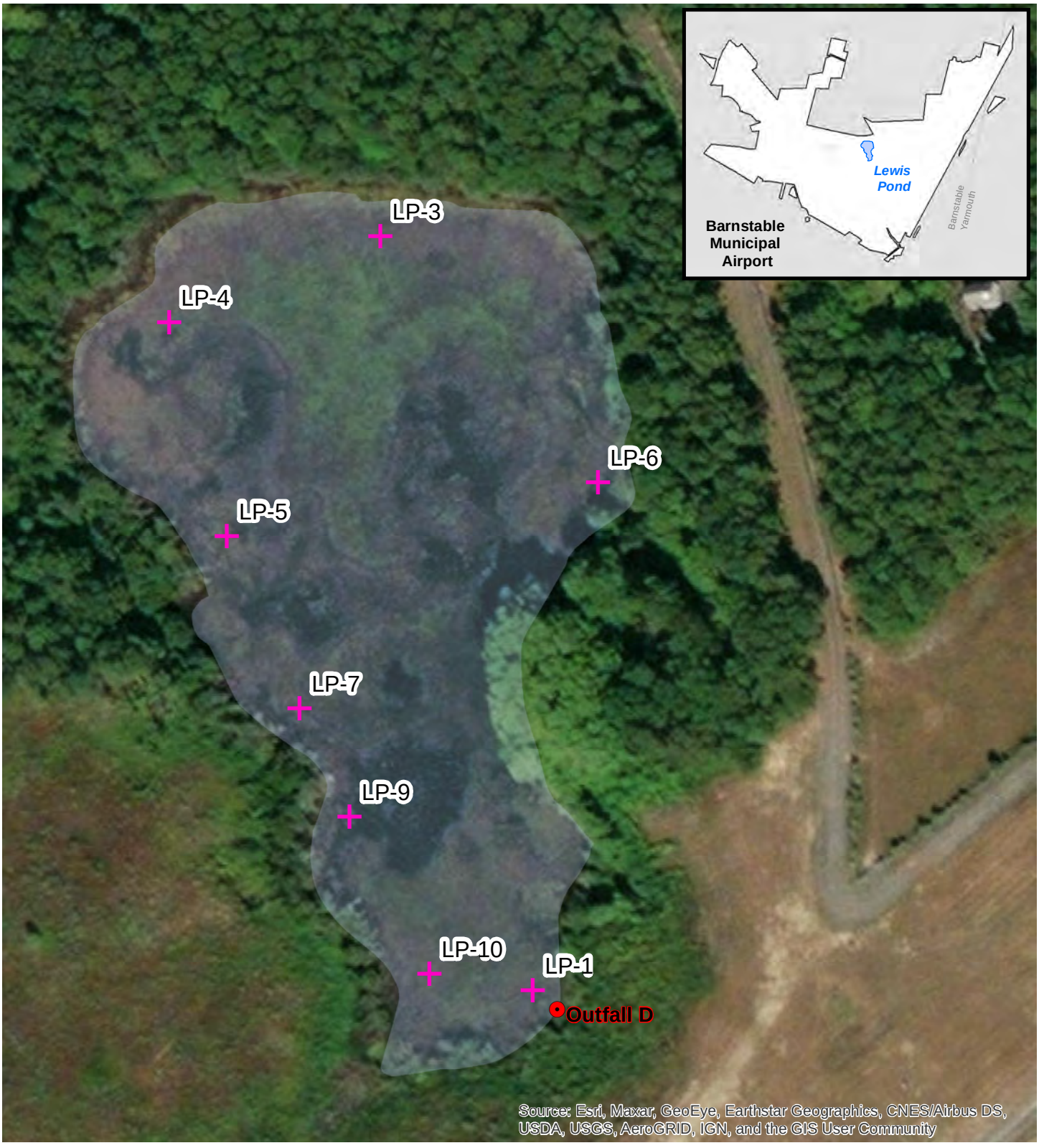
Upper Gate Pond
2021 Sample Locations
Barnstable Municipal Airport
Hyannis, MA

Date: 10/4/2021

Figure 2

Path: H:\Projects\HYA\21083 FY22 On-Call Services\GIS\Maps\211004_UpperGate_SamplingLocations.mxd



Legend

- Barnstable Municipal Airport Property Boundary
- Surface Water and disposal site boundary
- Stormwater Outfalls
- 08/02/2021 Sediment Sampling Locations

N

0 100

1" = 100 feet

*Source: Barnstable GIS
** All sediment sampling locations are approximate

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Lewis Pond
2021 Sample Locations
Barnstable Municipal Airport
Hyannis, MA

Date: 10/4/2021 Figure 3

Path: H:\Projects\HYA\21083 FY22 On-Call Services\GIS\Maps\211004_LewisPond_SamplingLocations.mxd

MassDEP - Bureau of Waste Site Cleanup

Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

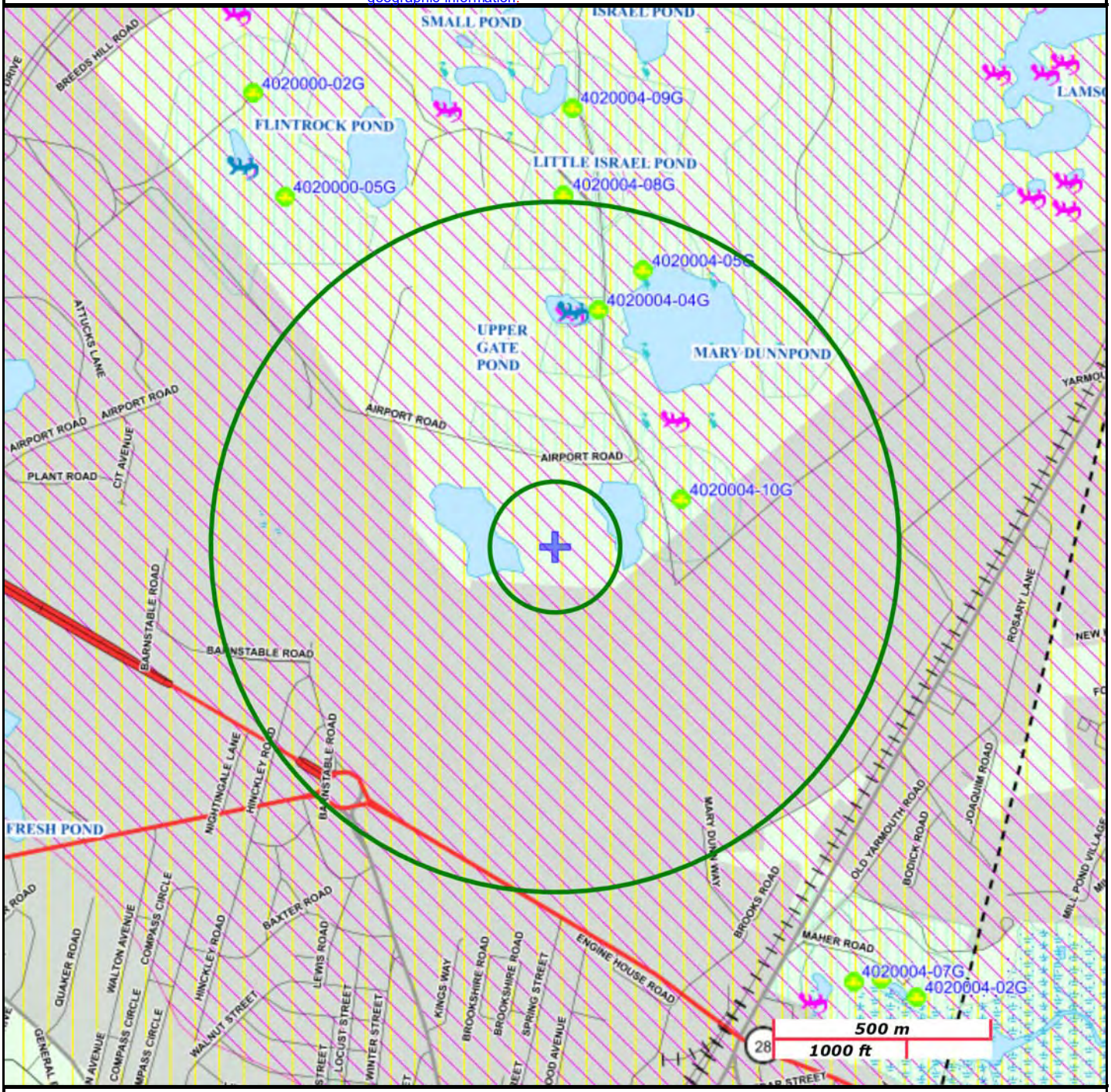
Site Information:

HYANNIS, MA

NAD83 UTM Meters:
4613955mN , 393329mE (Zone: 19)
November 1, 2021

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: https://www.mass.gov/orgs/massgis-bureau-of-geographic-information.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail

Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct

Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam

Aquifers: Medium Yield, High Yield, EPA Sole Source

Non Potential Drinking Water Source Area: Medium, High (Yield)

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential

Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.

Figure 4

Document Path: H:\Projects\HYA\11024 BMA Risk Assessment\GIS\Maps\ERC\20150515_MonWellLocs.mxd

Legend

**MassGIS, April 2014*

- Monitoring Wells Installed by HW on March 31, 2011
- Public Water Supplies*

N

0 600

1" = 600 feet

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Monitoring Well Locations
Barnstable Municipal Airport
Hyannis, MA

Date: 5/15/2014

Figure 5

last modified: 01/16/20 printed: 01/16/20 by ln H:\Projects\HYA\14105 BMA On-Call Eng Services\SWPPP\Drawings\Current Drainage Plan\151229 - Drainage Plan.dwg

DRAINAGE AREA A

DRAINAGE AREA E

DRAINAGE AREA F

DRAINAGE AREA G

DRAINAGE AREA O

DRAINAGE AREA N

DRAINAGE AREA C

DRAINAGE AREA D

DRAINAGE AREA B

DRAINAGE AREA M

DRAINAGE AREA H

DRAINAGE AREA I

DRAINAGE AREA J

DRAINAGE AREA K

DRAINAGE AREA L

VORTECHS WATER QUALITY UNIT

VORTECHS WATER QUALITY UNITS

MARY DUNN POND

UPPER GATE POND

LEWIS POND

RUNWAY 15/33 (5252' X 150')

RUNWAY 6/24 (5425' X 150')

MAIN TERMINAL APRON

EAST RAMP APRON

TAXIWAY A

TAXIWAY B

TAXIWAY C

TAXIWAY D

INFILTRATION BASIN

UNDERGROUND RECHARGE STRUCTURES

DISCHARGE CONTROL VALVES

D/WS AND PUMP STATION

LEGEND

RW1533-29 CB: Catchbasin
RW1533-29 LCB: Leaching Catchbasin
RW1533-29 LCB/RD: Leaching Catchbasin / Roof Drain
RW1533-29 LCB/UGDC: Leaching Catchbasin with Underground Discharge Chamber
RW1533-29 LB: Leaching Basin with No Catchment
O/WS: Oil Water Separator
Airport Property Line
BIO: Bioretention Basin
T31 VORTECH: CONTECH Water Quality Structure

NOTE:

All locations of buildings, utilities, and surface features derived from Town of Barnstable, Massachusetts, Geographic Information System. Location and nature of stormwater utilities based upon data provided by Edwards and Kelcey Barnstable Municipal Airport Drainage Plan (07/07), and field inspection of select utilities by Horsley Witten on July 15, 2008.

AIRPORT BUILDINGS/AREAS TABLE

NO.	BUILDING
1	RECTRIX AERODOME CENTER HANGAR
2	CAPE AIR/NANTUCKET AIR HANGAR
3	GRIFFIN AVIONICS
4	GRIFFIN AVIONICS FUEL STATION
5	SPECIALIZED AUTOMOTIVE
6	HANGAR 2 – CAPE AIR / AIRPORT MAINTENANCE
7	GATE F FUEL FARM
8	HANGAR BUILDING (VACANT)
9	ALLIES AIR
10	MAIN TERMINAL BUILDING
11	MAIN TERMINAL GENERATOR
12	AIR TRAFFIC CONTROL TOWER (ATCT)
13	SOUTH RAMP DEICING PAD
14	AIRPORT ARFF/SRE FACILITY
15	RECTRIX/AIR CAPE COD
16	RECTRIX/AIR CAPE COD FUEL FARM
17	AIRPORT LIGHTING VAULT
18	BMA T-HANGAR
19	AMA NANTUCKET INC.
20	CAPEFLIGHT INSTRUCTION
21	HYANNIS HANGAR LLC
22	HEXAGON HANGAR
23	KINGSBURY AVIATION (BUILDING 1)
24	KINGSBURY AVIATION (BUILDING 2)
25	STEAMSHIP AUTH. PARKING LOT
26	HERTZ CAR WASH
27	AVIS CAR WASH
28	BUDGET TRUCK RENTAL

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

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Checked By: JEL
Drawn By: GWTH
Designed By: GWTH
Date: 12/29/2015

Plan Title:

SITE PLAN
BARNSTABLE MUNICIPAL AIRPORT
HYANNIS, MASSACHUSETTS

Prepared For:
Barnstable Municipal Airport
480 Barnstable Road
Hyannis, MA 02601
(508) 775-2020

Revisions

1	12-27-11	ERK	Update to Drainage Plan
2	4-13-12	JEL	Update to Drainage Plan
3	4-27-12	GH	Update to Drainage Plan
4	1-25-13	JEL	Update to Drainage Plan
5	7-29-13	GH	Update to Drainage Plan
6	9-30-15	JEL	SWPPP Figure 3
7	12-29-15	GH	SWPPP Figure 3
8	12-31-19	LEN	Update to Drainage Plan

Project Number: 14105

Figure: Figure 6

Cape Air
-500-gal. AST of waste oil
-100-gal. AST of Avgas
-55-gal. drums of waste oil
-55-gal. drum of hydraulic oil
-55-gal. drums used oil filters
-55-gal. drums of anti-freeze

Rectrix Aerodrome
-55-gal. AST of Jet A Fuel
-55-gal. drum of Reclaimable Jet A Fuel
-55-gal. drums of waste oil
-55-gal. drum of waste absorbent

Griffin Avionics
-55-gal. drums of waste oil
-55-gal. drum of avgas
-55-gal. drum used oil filters

Gate F Fuel Farm
- Three 20,000-gal. ASTs of Jet A fuel
- One 4,000-gal. AST of gasoline
- One 4,000-gal. AST of diesel

Griffin Fuel Island
- Two 10,000-gal. USTs of Avgas 100 LL Fuel

Allies Air
-55-gal. drums of waste oil

AMA Nantucket Inc.
-55-gal. drums of waste oil
-55-gal. drum of mineral spirits

Cape Flight Instruction
-55-gal. drums of waste oil
-55-gal. drums of anti-freeze
-55-gal. drum of used oil filters

Hertz
-10,000-gal. UST of gasoline-
-250-gal. container of car washer fluid (deicer)

Avis
-250-gal. container of car washer fluid

Rectrix/Air Cape Cod Gate P Fuel Farm
- One 10,000-gal. AST of Jet A fuel
- One 10,000-gal. AST of Avgas 100 LL fuel
-55-gal. drum of Waste Jet A Fuel
-55-gal. drum of Avgas
-55-gal.drum waste absorbent

ARFF/SRE Building
-150-gal. anti-freeze and 350-gal. waste oil split double walled AST (outside)
-55-gal. drums of anti-freeze
-55-gal. drums of waste oil, hydraulic oil, grease, and other oils

Legend

Barnstable Municipal Airport Property Boundary

Mobile Refueler Parking Areas

Note:
AST = Above ground storage tank
UST = Underground Storage Tank
Avgas = Aviation Gas
LL = Low Lead
ARFF/SRE = Aircraft Rescue and Fire Fighting/Snow Removal Equipment

N

0 800

1" = 800 feet

Property = 645 acres

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Oil and Hazardous Materials (OHM) Storage Map
Cape Cod Gateway Airport
Hyannis, MA

Date: 1/10/2020

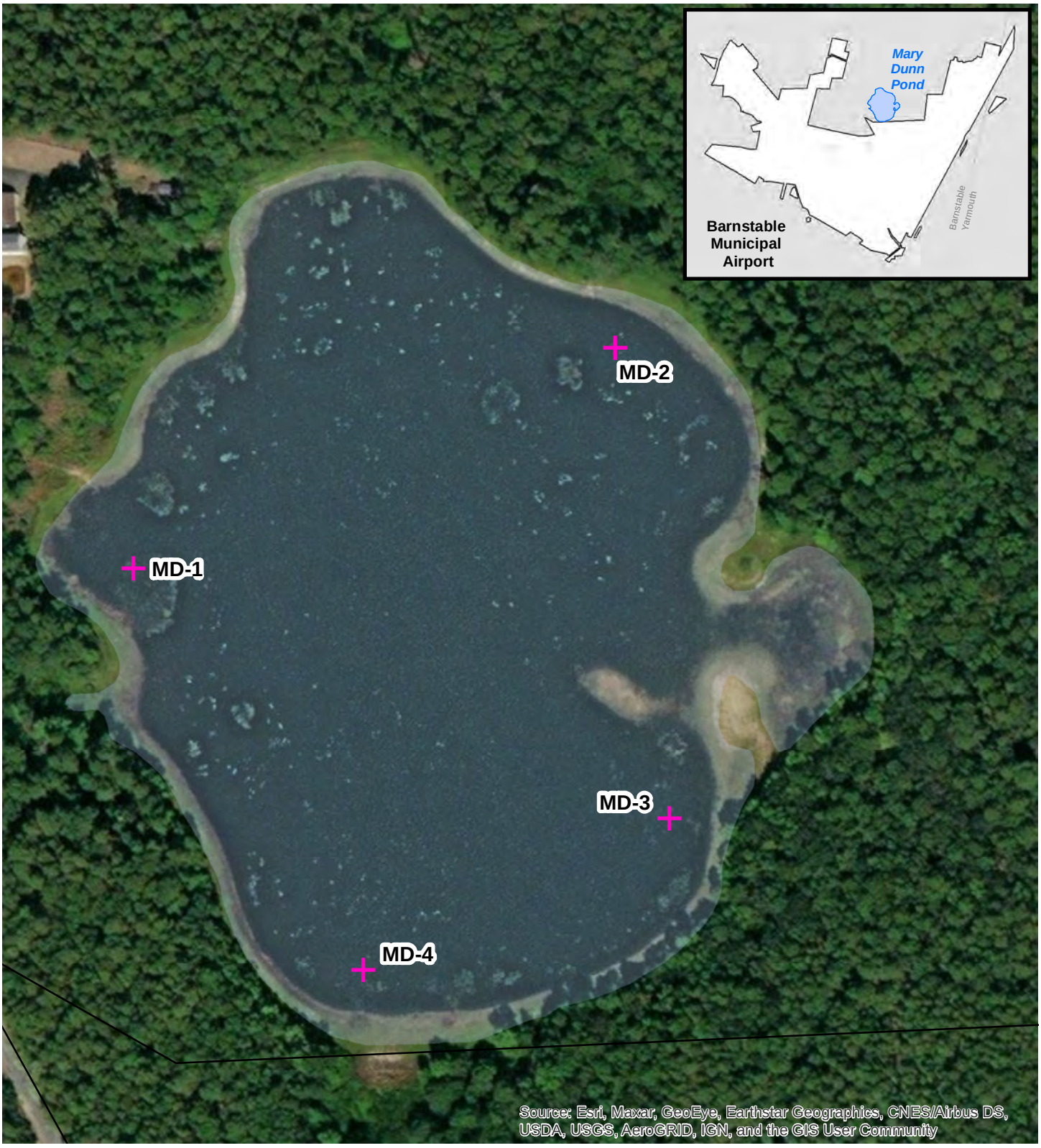
Figure 7

**Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services*

**2016 NAIP imagery service*

Document Path: H:\Projects\HYA\14105 BMA On-Call Eng Services\GIS\Maps\191230_SPCCP OHM Storage Map.mxd

Historic Drainage Map-1999
Figure 8



Legend

- Barnstable Municipal Airport Property Boundary
- Surface Water
- \+ 08/02/2021 Sediment Sampling Locations

N

Feet

170

*Source: Barnstable GIS
** All sediment sampling locations are approximate

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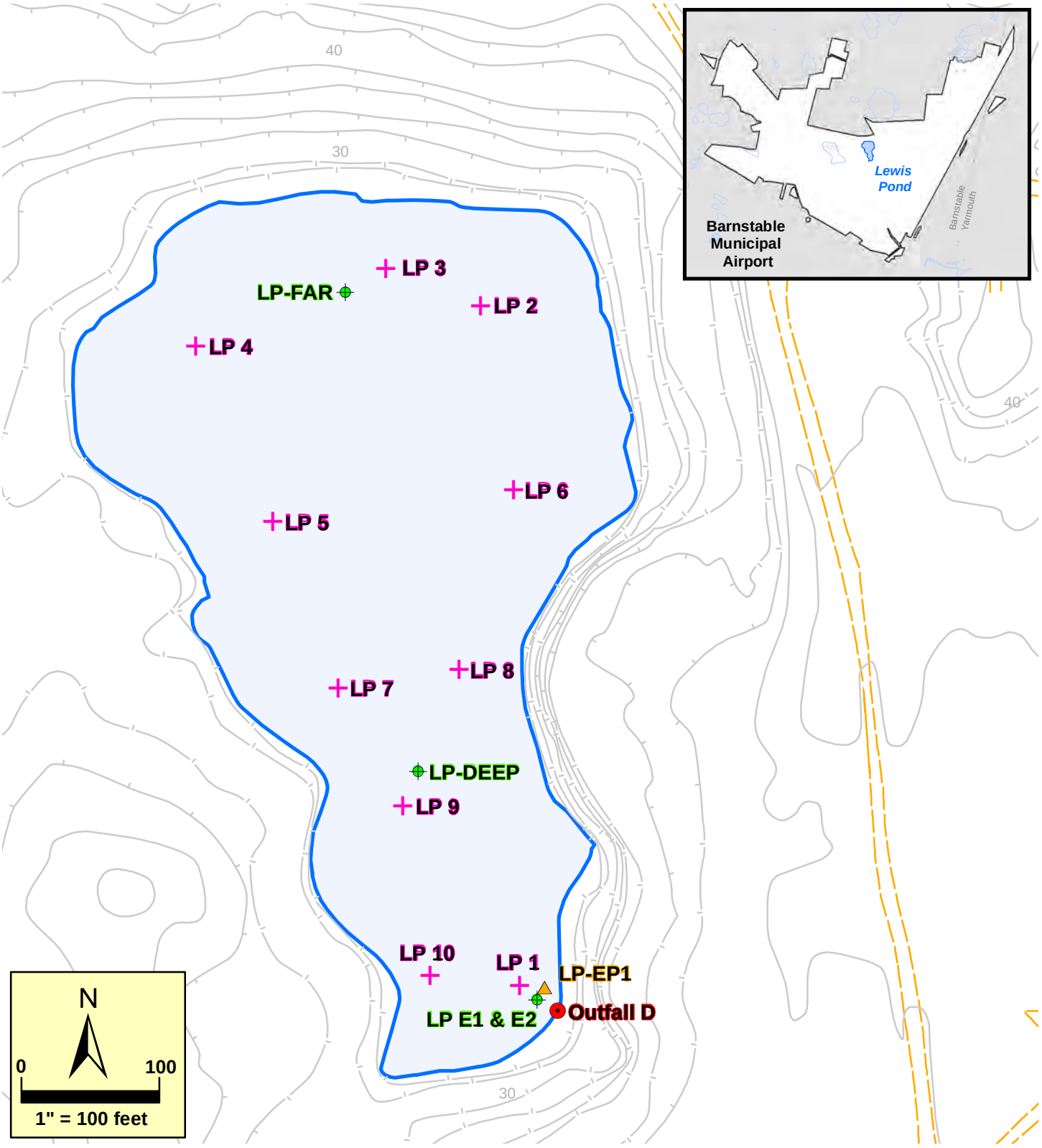
Sampling Locations
Mary Dunn Pond
Barnstable Municipal Airport
Hyannis, MA

Date: 10/4/2021

Figure 9

Path: H:\Projects\HYA\21083 FY22 On-Call Services\GIS\Maps\211004_MaryDunn_SamplingLocations.mxd



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Legend

- Barnstable Municipal Airport Property Boundary
- Ground Contours
- Surface Water
- Unimproved Roads
- 2/16/2011 Sediment Sampling Locations
- 10/20/2005 Sediment Sampling Locations
- 5/4/2004 Sediment Sampling Locations
- Stormwater Outfalls

*Source: Barnstable GIS
** All sediment sampling locations are approximate

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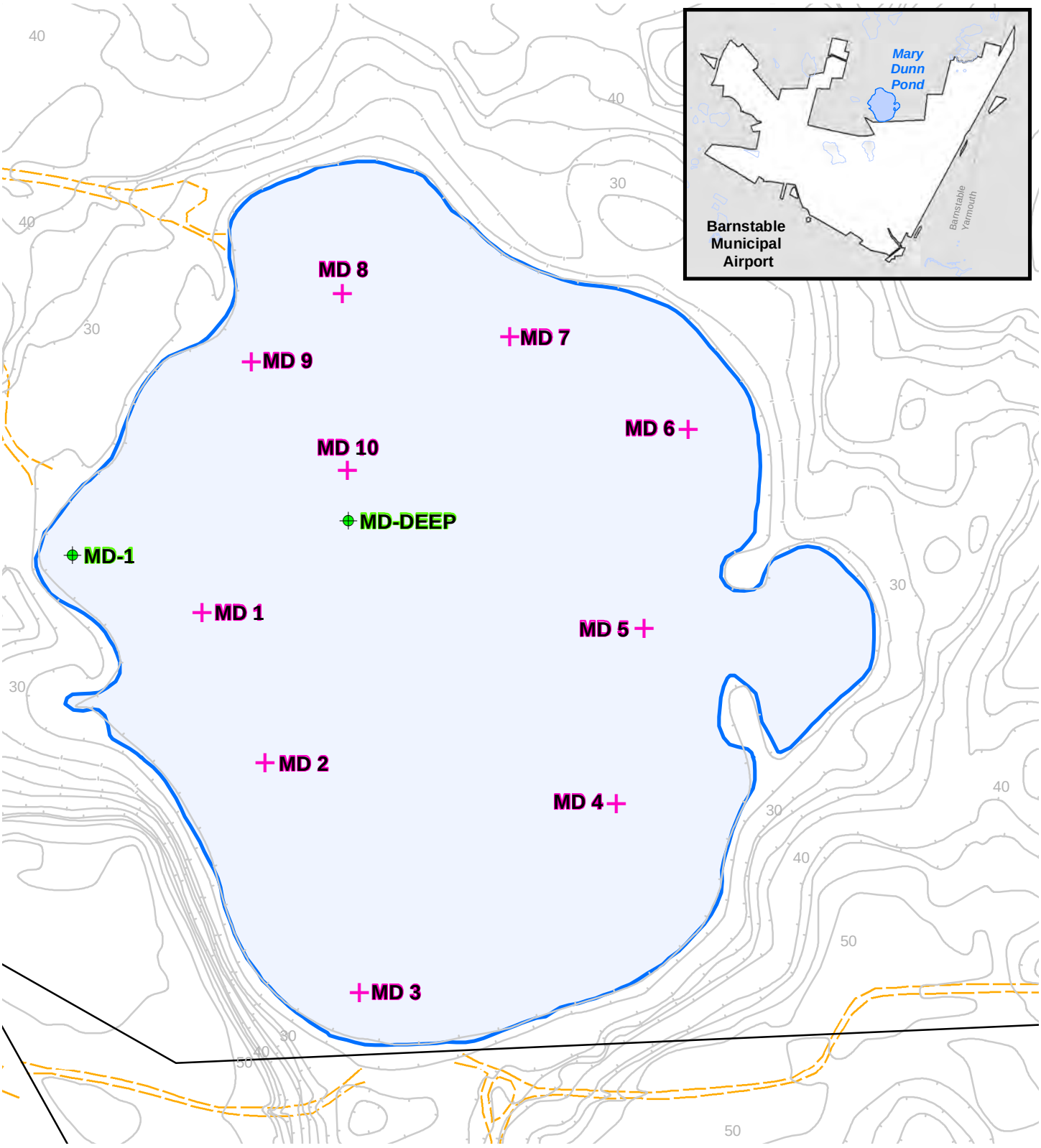
Historic Sampling Locations
Lewis Pond
Barnstable Municipal Airport
Hyannis, MA

Date: 5/15/2014 Figure 10



Path: H:\Projects\HYA\11024 BMA Risk Assessment\GIS\Maps\ERC\20150515_SamplingLocs_MDP.mxd

Legend

- Barnstable Municipal Airport Property Boundary
- Ground Contours
- Surface Water
- Unimproved Roads
- 2/16/2011 Sediment Sampling Locations
- 10/20/2005 Sediment Sampling Locations

*Source: Barnstable GIS
** All sediment sampling locations are approximate

N

0 170

1" = 170 feet

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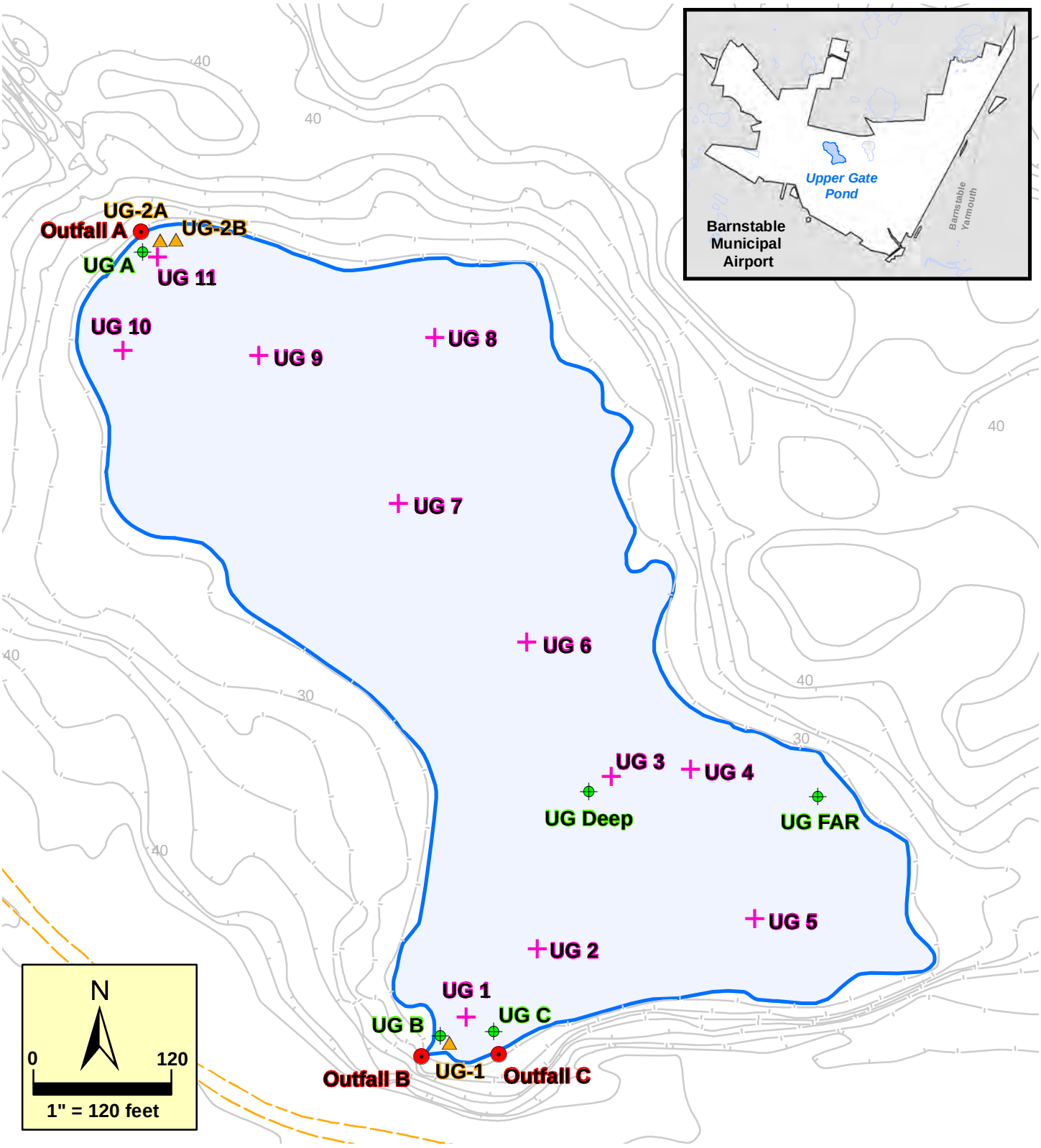
Historic Sampling Locations
Mary Dunn Pond
Barnstable Municipal Airport
Hyannis, MA

Date: 5/15/2014 Figure 11



Path: H:\Projects\HYA\11024 BMA Risk Assessment\GIS\Maps\ERC\20150515_SamplingLocs.mxd

Legend

- Barnstable Municipal Airport Property Boundary
- Ground Contours
- Surface Water
- Unimproved Roads
- 2/16/2011 Sediment Sampling Locations
- 10/20/2005 Sediment Sampling Locations
- 5/4/2004 Sediment Sampling Locations
- Stormwater Outfalls

*Source: Barnstable GIS
** All sediment sampling locations are approximate

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Historic Sampling Locations
Upper Gate Pond
Barnstable Municipal Airport
Hyannis, MA

Date: 5/15/2014

Figure 12

TABLES

1 -2011 Groundwater Sampling Results
2 -Pre-2005 Sediment Results
3 - 2011 Lewis Pond Sediment Results
4 - 2011 Marry Dunn Pond Sediment Results
5 - 2011 Upper Gate Pond Sediment Results
6 - 2021 Sediment Results
7 - Historic Surface Water Results

Table 1: 2011 Groundwater Sampling Results
Cape Cod Gateway Airport
Hyannis, Massachusetts

Sample ID[1]			HW-401S					HW-401D				HW-402				HW-403				HW-404			
Sample Date			4/7/2011	5/12/2011	8/16/2011	10/20/2011	12/14/2011	4/7/2011	8/16/2011	10/20/2011	12/14/2011	4/7/2011	8/16/2011	10/20/2011	12/14/2011	4/7/2011	8/16/2011	10/20/2011	12/14/2011	4/7/2011	8/16/2011	10/20/2011	12/14/2011
	Method 1 GW-1	**Method 1 GW-3**																					
Dissolved Metals[3]																							
Arsenic	10	900	<2.5	NS	<2.5	3.2	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Barium	2,000	50,000	<25	NS	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	36	<25	<25	<25	<25	<25	<25	<25
Cadmium	5	4	<2.5	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chromium	100	300	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Lead	15	10	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Mercury	2	20	<0.2	NS	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20
Selenium	50	100	<25	NS	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Silver	100	7	<5	NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Polynuclear Aromatic Hydrocarbons (PAHs)[3]																							
2-Methylnaphthalene	10	20,000	<0.21	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20
Acenaphthene	20	10,000	<0.21	<0.2 J	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20
Acenaphthylene	30	40	<0.21	<0.2 J	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20
Anthracene	60	30	<0.21	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20
Benzo(a)anthracene	1	1,000	0.08	<0.05 J	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.2	500	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	1	400	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	50	20	<0.21	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20
Benzo(k)fluoranthene	1	100	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	2	70	0.09	<0.05 J	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)Anthracene	0.5	40	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	90	200	<0.21	<0.2 J	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20
Fluorene	30	40	<0.21	<0.2 J	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20
Indeno(1,2,3-cd)Pyrene	0.5	100	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	140	20,000	<0.21	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	0.41	<0.2	<0.2	<0.20	0.91
Phenanthrene	40	10,000	<0.21	<0.2 J	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20
Pyrene	60	20	<0.21	<0.2 J	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20	<0.2	<0.2	<0.20	<0.20

NOTES:

1. Wells HW-401S, HW-401D, HW-402, HW-403, and HW-404 were historically referred to as HW-1S and HW-1D, HW-2, HW-3, and HW-4, respecitvely. All samples collected by Horsley Witten Group, Inc.
2. Method 1 values are from the Massachusetts Contingency Plan
3. Dissolved metals analyzed via EPA Method 3005A/3020A/6000/7000 and PAHs analyzed via EPA Method 8270D(SIM) by ESS Laboratory of Cranston, RI.
4. All values reported in micrograms per liter (ug/L).
5. "<" indicates that the sample was not detected above the laboratory reporting limit
6. NS = not sampled
7. "J" flag = concentration is estimated due to laboratory quality control issue

Table 2: Pre-2005 Sediment Results
Cape Cod Gateway Airport
Hyannis, Massachusetts

			LEWIS POND						UPPER GATE POND									MARY DUNN POND			FRESH POND
Sampling Date			10/1/2001[2]	5/4/2004[3]	10/20/2005[3]	10/20/2005[3]	10/20/2005[3]	10/20/2005[3]	10/1/2001[2]	5/4/2004[3]	5/4/2004[3]	5/4/2004[3]	10/20/2005[3]	10/20/2005[3]	10/20/2005[3]	10/20/2005[3]	10/20/2005[3]	10/1/2001[2]	10/20/2005[3]	10/20/2005[3]	10/1/2001[2]
Sample ID			HYAS1	LP-EP1	LP-EP1	LP-EP2	LP-DEEP	LP-FAR	HYAS2	UG-1	UG-2A	UG-2B	UG-A	UG-B	UG-C	UG-DEEP	UG-FAR	HYAS3	MD-1	MD-DEEP	HYAS4
Location Information			Location Unknown	Outfall D	Outfall D	Outfall D	Deep Water	Northern End, Far from Outfall	Location Unknown	Outfall B	Outfall A	Outfall A	Outfall A	Outfall B	Outfall C	Deep Water	Southeastern End, Far from Outfalls B & C	Location Unknown	Near Parking Area, Western End	Deep Water	Location Unknown
Parameter	**Units**	**Sediment Screening Criteria**																			
BULK PROPERTIES AND NUTRIENTS																					
Total solids	%	n/a	10	NA	NA	NA	NA	NA	11	NA	NA	NA	NA	NA	NA	NA	NA	11	NA	NA	7.7
TKN	mg/kg as N	n/a	21,000	NA	NA	NA	NA	NA	15,000	NA	NA	NA	NA	NA	NA	NA	NA	17,000	NA	NA	17,000
Total phosphorus	mg/kg as P	n/a	130	NA	NA	NA	NA	NA	460	NA	NA	NA	NA	NA	NA	NA	NA	510	NA	NA	230
Total Organic Carbon	%	n/a	26.9	NA	NA	NA	NA	NA	10.5	NA	NA	NA	NA	NA	NA	NA	NA	20.2	NA	NA	23.1
	mg/kg	n/a	NA	NA	26,000	30,000	38,000	100,000	NA	NA	NA	NA	2,700	1,100	55,000	28,000	100,000	NA	12,000	35,000	NA
METALS																					
Total Arsenic	mg/kg	33	5.5	NA	NA	NA	NA	NA	7.1	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND
Total Barium	mg/kg	n/a	52	NA	NA	NA	NA	NA	52	NA	NA	NA	NA	NA	NA	NA	NA	53	NA	NA	71
Total Cadmium	mg/kg	5.0	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND
Total Chromium	mg/kg	110	8.5	NA	NA	NA	NA	NA	23	NA	NA	NA	NA	NA	NA	NA	NA	6.4	NA	NA	7.4
Total Lead	mg/kg	130	85	**333**	**162**	121	**223**	104	**360**	**442**	12.9	**245**	14.6	75.5	**352**	**676**	**225**	ND	19.0	**624**	52
Total Mercury	mg/kg	0.18	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND
Total Selenium	mg/kg	n/a	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND
Total Silver	mg/kg	n/a	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND
ORGANIC COMPOUNDS																					
Acenapthene	µg/kg	n/a	ND	<2,000	<46	<48	<478	<80	ND	<2,790	<476	<2,620	37	<31	<159	<316	<182	ND	<34	<165	ND
2-Chloronaphthalene	µg/kg	n/a	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND
Fluoranthene	µg/kg	420	270	**3,400 J**	**2180**	**2,130**	<478	329	**13,000**	**7,710 J**	**781 J**	**2,830 J**	**972**	**630**	**2,190**	**1,100**	**1,210**	ND	<34	224	ND
Naphthalene	µg/kg	180	ND	<2,000	<46	<48	<478	<80	ND	<2,790	<476	<2,620	<31	<31	<159	<316	<182	ND	<34	<165	ND
Benzo(a)anthracene	µg/kg	110	ND	<2,000	**633**	**726**	<478	**169**	**4,100**	<2,790	<476	<2,620	**428**	**265**	**832**	<316	**284**	ND	<34	<165	ND
Benzo(a)pyrene	µg/kg	150	ND	<2,000	**1,070**	**1,150**	<478	**197**	**4,700**	<2,790	<476	<2,620	**538**	**343**	**1,260**	**518**	**437**	ND	<34	<165	ND
Benzo(b)fluoranthene	µg/kg	n/a	ND	<2,000 J	1,210	1,210	<478	196	5,900	3960 J	<476 J	<2,620 J	495	429	2,010	713	671	ND	<34	<165	ND
Benzo(k)fluoranthene	µg/kg	n/a	ND	<2,000	1,200	1,280	<478	193	5,300	<2,790	<476	<2,620	508	367	1,550	650	605	ND	<34	<165	ND
Chrysene	µg/kg	170	ND	<2,000 J	**1,020**	**1,170**	<478	**201**	**6,000**	**3,480 J**	<476 J	<2,620 J	**612**	**368**	**1,580**	**574**	**587**	ND	34	<165	ND
Acenaphthylene	µg/kg	n/a	ND	<2,000	<46	<48	<478	<80	ND	<2,790	<476	<2,620	<31	<31	<159	<316	<182	ND	<34	<165	ND
Anthracene	µg/kg	57	ND	<2,000	**89**	**85**	<478	<80	**1,000**	<2,790	<476	<2,620	55	<31	<159	<316	<182	ND	<34	<165	ND
Benzo(g,h,i)perylene	µg/kg	n/a	ND	<2,000	661	528	<478	<80	3,500	<2,790	<476	<2,620	240	171	638	<316	<182	ND	<34	<165	ND
Fluorene	µg/kg	77	ND	<2,000	<46	<48	<478	<80	ND	<2,790	<476	<2,620	<31	<31	<159	<316	<182	ND	<34	<165	ND
Phenanthrene	µg/kg	200	ND	<2,000 J	**770**	**938**	<478	<80	**7,400**	**2,990 J**	<476 J	<2,620 J	**459**	**364**	**1,000**	**341**	**372**	ND	<34	<165	ND
Dibenzo(a,h)anthracene	µg/kg	33	ND	<2,000	**247**	**204**	<478	<80	**940**	<2,790	<476	<2,620	**94**	**75**	**276**	<316	<182	ND	<34	<165	ND
Indeno(1,2,3-cd)Pyrene	µg/kg	n/a	ND	<2,000	745 J	611	<478	<80	3,500	<2,790	<476	<2,620	262	198	759	<316	211	ND	<34	<165	ND
Pyrene	µg/kg	200	**250**	**2,590 J**	**1,670**	**1,720**	<478	**257**	**10,000**	**5,460 J**	**898 J**	<2,620 J	**1,080**	**512**	**1,480**	**726**	**995**	ND	<34	182	ND
1-Methylnaphthalene	µg/kg	n/a	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	<165	ND
2-Methylnaphthalene	µg/kg	n/a	ND	<2,000	<46	<48	<478	<80	ND	<2,790	<476	ND/2,620	<31	<31	<159	<316	<182	ND	<34	<165	ND
Perylene	µg/kg	n/a	ND	NA	NA	NA	NA	NA	980	NA	NA	NA	NA	NA	NA	NA	NA	570	NA	NA	570
Biphenyl	µg/kg	n/a	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND
Benzo(e)Pyrene	µg/kg	n/a	ND	NA	NA	NA	NA	NA	3,600	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND
C9-C18 Aliphatic Hydrocarbons	mg/kg	n/a	NA	<150 J	NA	NA	NA	NA	NA	<209 J	<35.7 J	<197 J	NA	NA	NA	NA	NA		NA	NA	NA
C19-C36 Aliphatic Hydrocarbons	mg/kg	n/a	NA	<150	NA	NA	NA	NA	NA	411	<35.7	<197	NA	NA	NA	NA	NA	NA	NA	NA	NA
C11-C22 Unadjusted Aromatic Hydrocarbons	mg/kg	n/a	NA	<150	NA	NA	NA	NA	NA	<209	<35.7	<197	NA	NA	NA	NA	NA		NA	NA	NA
C11-C22 Aromatic Hydrocarbons	mg/kg	n/a	NA	<150	NA	NA	NA	NA	NA	<209	<35.7	<197	NA	NA	NA	NA	NA		NA	NA	NA
Total hydrocarbons	mg/kg	n/a	3,200	NA	NA	NA	NA	NA	3,800	NA	NA	NA	NA	NA	NA	NA	NA	1,500	NA	NA	3600
All PCB/Pesticides	µg/kg	60 (Total PCBs)	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND

NOTES:

1. Screening Criteria from MA DEP's "Revised Sediment Screening Value", Technical Update to Section 9 of the *Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan (1996)* .
2. Analyses reported in *Barnstable Airport Improvement Project, Hyannis, MA EOEA #12267, Draft Environmetnal Impact Report* , July 2003. Prepared by Baystate Environmental Consultants, Inc. and others.
3. Sampling conducted by Horsley Witten Group, Inc. First reported in *Barnstable Municipal Airport Improvement Project, Development of Regional Impact Application* , April 7, 2006. Prepared by Horsley Witten Group, Inc. and others.
4. NA = not analyzed
5. ND = not detected above the laboratory reporting limit, reporting limit unavailable
6. **BOLD =** concentration exceeds applicable screening criteria.
7. "<" = not detected above the laboratory reporting limit, reporting limit provided
8. "J" flag indicates estimated value due to laboratory quality control
9. Grey shading = laboratory reporting limit (where available) exceeds Sediment Screening Criteria
10. n/a = not available

Table 3: 2011 Lewis Pond Sediment Results
Cape Cod Gateway Airport
Hyannis, Massachusetts

Sample ID			LP1	LP2	LP3	LP4	LP5	LP6	LP7	LP8	LP9	LP10
Parameter	**Units**	**Sediment Screening Criteria[1]**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**
Metals												
Arsenic	mg/kg	33	6.1	<20	<24.4	<25.7	<25.5	<27.2	<29	<23.2	<20.7	<7.1
Barium	mg/kg	n/a	55.9	50.8	49.4	54.7	61.1	48.5	51.7	45.2	43.1	9.2
Cadmium	mg/kg	5.0	4.13	<4.02	<4.92	<5.17	<5.13	<5.47	<5.84	<4.67	<4.17	<1.43
Chromium	mg/kg	110	39.6	11.8	<9.8	<10.3	<10.2	<10.9	<11.6	<9.3	<8.3	<2.8
Lead	mg/kg	130	**325**	95.6	<49	52.6	<51	106	<58.2	<46.5	<41.5	<14.2
Mercury	mg/kg	0.18	**0.18**	<0.295	<0.314	<0.344	<0.375	<0.361	<0.399	<0.344	<0.265	<0.083
Selenium	mg/kg	n/a	<12.2	<40.1	<49	<51.5	<51	<54.5	<58.2	<46.5	<41.5	<14.2
Silver	mg/kg	n/a	<1.22	<4.02	<4.92	<5.17	<5.13	<5.47	<5.84	<4.67	<4.17	<1.43
Polynuclear Aromatic Hydrocarbons (PAHs)												
2-Methylnaphthalene	µg/kg	n/a	<806	<2,990	<3,650	<3,600	<4,130	<3,540	<4,160	<3,750	<2,950	<921
Acenaphthene	µg/kg	n/a	<806	<2,990	<3,650	<3,600	<4,130	<3,540	<4,160	<3,750	<2,950	<921
Acenaphthylene	µg/kg	n/a	<806	<2,990	<3,650	<3,600	<4,130	<3,540	<4,160	<3,750	<2,950	<921
Anthracene	µg/kg	57	<806	<2,990	<3,650	<3,600	<4,130	<3,540	<4,160	<3,750	<2,950	<921
Benzo(a)anthracene	µg/kg	110	<806	<2,990	<3,650	<3,600	<4,130	<3,540	<4,160	<3,750	<2,950	<921
Benzo(a)pyrene	µg/kg	150	<404	<1,500	<1,830	<1,810	<2,070	<1,770	<2,090	<1,880	<1,480	<462
Benzo(b)fluoranthene	µg/kg	n/a	<806	<2,990	<3,650	<3,600	<4,130	<3,540	<4,160	<3,750	<2,950	<921
Benzo(g,h,i)perylene	µg/kg	n/a	<806	<2,990	<3,650	<3,600	<4,130	<3,540	<4,160	<3,750	<2,950	<921
Benzo(k)fluoranthene	µg/kg	n/a	<806	<2,990	<3,650	<3,600	<4,130	<3,540	<4,160	<3,750	<2,950	<921
Chrysene	µg/kg	170	<404	<1,500	<1,830	<1,810	<2,070	<1,770	<2,090	<1,880	<1,480	<462
Dibenzo(a,h)Anthracene	µg/kg	33	<404	<1,500	<1,830	<1,810	<2,070	<1,770	<2,090	<1,880	<1,480	<462
Fluoranthene	µg/kg	420	<806	<2,990	<3,650	<3,600	<4,130	<3,540	<4,160	<3,750	<2,950	<921
Fluorene	µg/kg	77	<806	<2,990	<3,650	<3,600	<4,130	<3,540	<4,160	<3,750	<2,950	<921
Indeno(1,2,3-cd)Pyrene	µg/kg	n/a	<806	<2,990	<3,650	<3,600	<4,130	<3,540	<4,160	<3,750	<2,950	<921
Naphthalene	µg/kg	180	<806	<2,990	<3,650	<3,600	<4,130	<3,540	<4,160	<3,750	<2,950	<921
Phenanthrene	µg/kg	200	<806	<2,990	<3,650	<3,600	<4,130	<3,540	<4,160	<3,750	<2,950	<921
Pyrene	µg/kg	200	<806	<2,990	<3,650	<3,600	<4,130	<3,540	<4,160	<3,750	<2,950	<921
Percent Solids	%	n/a	39	11	9	9	8	9	8	9	11	35

NOTES:

1. Screening Criteria from MA DEP's "Revised Sediment Screening Value", Technical Update to Section 9 of the *Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan* (1996).
2. All samples collected by Horsley Witten Group, Inc. on February 16, 2011.
3. All analyses performed by ESS Laboratories, Inc. of Cranston, RI. Metals analyzed via EPA Method 3050B/6000/7000 and PAHs by EPA Method 8270D.
4. **BOLD** = concentration exceeds applicable screening criteria
5. Grey shaded = reporting limit is greater than screening critiera
6. "<" = not detected, reporting limit provided
7. n/a = not available

Table 4: 2011 Marry Dunn Pond Sediment Results
Cape Cod Gateway Airport
Hyannis, Massachusetts

Sample ID			MD1	MD2	MD3	MD4	MD5	MD6	MD7	MD8	MD9	MD10
Paramter	**Units**	**Sediment Screening Criteria[1]**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**
Metals												
Arsenic	mg/kg	33	<2.3	<1.9	<11.4	<2	<6.6	<3.1	<21.3	<19.5	<15	<20.1
Barium	mg/kg	n/a	8.5	3.9	32.2	6.6	31.3	10.5	56.5	55.1	62.2	71.5
Cadmium	mg/kg	5.0	<0.46	<0.37	<2.28	<0.41	<1.33	<0.62	<4.28	<3.92	<3.02	<4.04
Chromium	mg/kg	110	1.5	1.0	6.5	1.2	5.9	2	<8.5	<7.8	9.7	10.1
Lead	mg/kg	130	56	<3.7	24.9	13.5	<13.2	34.2	<42.6	<39	<30	75.4
Mercury	mg/kg	0.18	<0.025	<0.018	<0.148	<0.023	<0.103	<0.041	<0.283	<0.277	<0.211	<0.257
Selenium	mg/kg	n/a	<4.6	<3.7	<22.7	<4.1	<13.2	<6.1	<42.6	<39	<30	<40.2
Silver	mg/kg	n/a	<0.46	<0.37	<2.28	<0.41	<1.33	<0.62	<4.28	<3.92	<3.02	<4.04
Polynuclear Aromatic Hydrocarbons (PAHs)												
2-Methylnaphthalene	µg/kg	n/a	<449	<389	<1,600	<442	<1,020	<757	<3,180	<3,030	<2,380	<3,030
Acenaphthene	µg/kg	n/a	<449	<389	<1,600	<442	<1,020	<757	<3,180	<3,030	<2,380	<3,030
Acenaphthylene	µg/kg	n/a	<449	<389	<1,600	<442	<1,020	<757	<3,180	<3,030	<2,380	<3,030
Anthracene	µg/kg	57	<449	<389	<1,600	<442	<1,020	<757	<3,180	<3,030	<2,380	<3,030
Benzo(a)anthracene	µg/kg	110	<449	<389	<1,600	<442	<1,020	<757	<3,180	<3,030	<2,380	<3,030
Benzo(a)pyrene	µg/kg	150	<225	<195	<803	<222	<512	<380	<1,600	<1,520	<1,190	<1,520
Benzo(b)fluoranthene	µg/kg	n/a	<449	<389	<1,600	<442	<1,020	<757	<3,180	<3,030	<2,380	<3,030
Benzo(g,h,i)perylene	µg/kg	n/a	<449	<389	<1,600	<442	<1,020	<757	<3,180	<3,030	<2,380	<3,030
Benzo(k)fluoranthene	µg/kg	n/a	<449	<389	<1,600	<442	<1,020	<757	<3,180	<3,030	<2,380	<3,030
Chrysene	µg/kg	170	<225	<195	<803	<222	<512	<380	<1,600	<1,520	<1,190	<1,520
Dibenzo(a,h)Anthracene	µg/kg	33	<225	<195	<803	<222	<512	<380	<1,600	<1,520	<1,190	<1,520
Fluoranthene	µg/kg	420	<449	<389	<1,600	<442	<1,020	<757	<3,180	<3,030	<2,380	<3,030
Fluorene	µg/kg	77	<449	<389	<1,600	<442	<1,020	<757	<3,180	<3,030	<2,380	<3,030
Indeno(1,2,3-cd)Pyrene	µg/kg	n/a	<449	<389	<1,600	<442	<1,020	<757	<3,180	<3,030	<2,380	<3,030
Naphthalene	µg/kg	180	<449	<389	<1,600	<442	<1,020	<757	<3,180	<3,030	<2,380	<3,030
Phenanthrene	µg/kg	200	<449	<389	<1,600	<442	<1,020	<757	<3,180	<3,030	<2,380	<3,030
Pyrene	µg/kg	200	<449	<389	<1,600	<442	<1,020	<757	<3,180	<3,030	<2,380	<3,030
Percent Solids	%	n/a	70	85	20	71	32	44	10	11	14	11

NOTES:

1. Screening Criteria from MA DEP's "Revised Sediment Screening Value", Technical Update to Section 9 of the *Guidance for Disposal Site Risk Characterization - In Support o Massachusetts Contingency Plan* (1996).
2. All samples collected by Horsley Witten Group, Inc. on February 16, 2011.
3. All analyses performed by ESS Laboratories, Inc. of Cranston, RI. Metals analyzed via EPA Method 3050B/6000/7000 and PAHs by EPA Method 8270D.
4. **BOLD** = concentration exceeds applicable screening criteria
5. Grey shaded = reporting limit is greater than screening critiera

Table 5: 2011 Upper Gate Pond Sediment Results
Cape Cod Gateway Airport
Hyannis, Massachusetts

Sample ID			UG1	UG2	UG3	UG4	UG5	UG6	UG7	UG8	UG9	UG10	UG11
Parameter	**Units**	**Sediment Screening Criteria[1]**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**	**2/16/2011**
Metals													
Arsenic	mg/kg	33	<3	<2.4	<42.3	<30	<36.2	<25.1	<27.9	<26.8	<32.6	<28.3	<22.4
Barium	mg/kg	n/a	11.3	7.9	61.7	60.3	78.5	76.6	60.9	57.3	80.6	51.3	61.3
Cadmium	mg/kg	5.0	<0.6	<0.48	<8.52	<6.04	<7.28	<5.05	<5.61	<5.39	<6.56	<5.68	<4.5
Chromium	mg/kg	110	18.7	6.8	<16.9	<12	<14.5	<10	<11.1	<10.7	<13	<11.3	<8.9
Lead	mg/kg	130	82.5	43.1	**152**	<60.1	78.4	<50.3	<55.8	<53.7	65.3	<56.6	<44.8
Mercury	mg/kg	0.18	<0.029	<0.03	<0.6	<0.364	<0.524	<0.319	<0.354	<0.354	<0.449	<0.359	<0.361
Selenium	mg/kg	n/a	<6	<4.8	<84.8	<60.1	<72.5	<50.3	<55.8	<53.7	<65.3	<56.6	<44.8
Silver	mg/kg	n/a	<0.6	<0.48	<8.52	<6.04	<7.28	<5.05	<5.61	<5.39	<6.56	<5.68	<4.5
Polynuclear Aromatic Hydrocarbons (PAHs)													
2-Methylnaphthalene	µg/kg	n/a	<483	<476	<6,280	<3,930	<5,550	<3,580	<4,160	<3,930	<4,690	<3,930	<3,600
Acenaphthene	µg/kg	n/a	<483	<476	<6,280	<3,930	<5,550	<3,580	<4,160	<3,930	<4,690	<3,930	<3,600
Acenaphthylene	µg/kg	n/a	<483	<476	<6,280	<3,930	<5,550	<3,580	<4,160	<3,930	<4,690	<3,930	<3,600
Anthracene	µg/kg	57	<483	<476	<6,280	<3,930	<5,550	<3,580	<4,160	<3,930	<4,690	<3,930	<3,600
Benzo(a)anthracene	µg/kg	110	**1,160**	<476	<6,280	<3,930	<5,550	<3,580	<4,160	<3,930	<4,690	<3,930	<3,600
Benzo(a)pyrene	µg/kg	150	**1,060**	<239	<3,150	<1,970	<2,780	<1,800	<2,090	<1,970	<2,350	<1,970	<1,810
Benzo(b)fluoranthene	µg/kg	n/a	1,330	<476	<6,280	<3,930	<5,550	<3,580	<4,160	<3,930	<4,690	<3,930	<3,600
Benzo(g,h,i)perylene	µg/kg	n/a	562	<476	<6,280	<3,930	<5,550	<3,580	<4,160	<3,930	<4,690	<3,930	<3,600
Benzo(k)fluoranthene	µg/kg	n/a	1,370	<476	<6,280	<3,930	<5,550	<3,580	<4,160	<3,930	<4,690	<3,930	<3,600
Chrysene	µg/kg	170	**1,560**	<239	<3,150	<1,970	<2,780	<1,80	<2,090	<1,970	<2,350	<1,970	<1,810
Dibenzo(a,h)Anthracene	µg/kg	33	**387**	<239	<3,150	<1,970	<2,780	<1,80	<2,090	<1,970	<2,350	<1,970	<1,810
Fluoranthene	µg/kg	420	**3,620**	<476	<6,280	<3,930	<5,550	<3,580	<4,160	<3,930	<4,690	<3,930	<3,600
Fluorene	µg/kg	77	<483	<476	<6,280	<3,930	<5,550	<3,580	<4,160	<3,930	<4,690	<3,930	<3,600
Indeno(1,2,3-cd)Pyrene	µg/kg	n/a	567	<476	<6,280	<3,930	<5,550	<3,580	<4,160	<3,930	<4,690	<3,930	<3,600
Naphthalene	µg/kg	180	<483	<476	<6,280	<3,930	<5,550	<3,580	<4,160	<3,930	<4,690	<3,930	<3,600
Phenanthrene	µg/kg	200	**2,370**	<476	<6,280	<3,930	<5,550	<3,580	<4,160	<3,930	<4,690	<3,930	<3,600
Pyrene	µg/kg	200	**2,910**	<476	<6,280	<3,930	<5,550	<3,580	<4,160	<3,930	<4,690	<3,930	<3,600
Percent Solids	%	n/a	68	66	5	8	6	9	8	8	7	8	9

NOTES:

1. Screening Criteria from MA DEP's "Revised Sediment Screening Value", Technical Update to Section 9 of the *Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan* (1996).
2. All samples collected by Horsley Witten Group, Inc. on February 16, 2011.
3. All analyses performed by ESS Laboratories, Inc. of Cranston, RI. Metals analyzed via EPA Method 3050B/6000/7000 and PAHs by EPA Method 8270D.
4. **BOLD** = concentration exceeds applicable screening criteria
5. Grey shaded = reporting limit is greater than screening critiera
6. "<" = not detected, reporting limit provided

Table 6: 2021 Sediment Results
Cape Cod Gateway Airport
Hyannis, Massachusetts

ANALYTE	SAMPLE ID:	LP-1	LP-10	LP-9	LP-7	LP-COMP 1	LP-5	LP-4	LP-3	LP-6	LP-COMP 2	MD-COMP	UG-11	UG-11A	UG-11B
	COLLECTION DATE:	8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/6/2021	8/6/2021	8/6/2021
	SAMPLE DEPTH:	0-2'	0-2'	0-2'	0-2'	0-2'	0-2'	0-2'	0-2'	0-2'	0-2'	0-2'	0-2'	0-2'	0-2'
	Sediment Screening Criteria (ug/kg)	Sample Results													
Acenaphthene	NA	30	86 U	300 U	120 U	21 U	180 U	230 U	150 U	320 U	200 U	38 U	110 J	23 J	46
Fluoranthene	420	**2,800**	**1,200**	**2,100**	**860**	**1,200**	**600**	**580**	**630**	**790**	**550**	38 U	**10,000**	**1,500**	**2,200**
Naphthalene	180	30 U	86 U	**300 U**	120 U	21 U	**400**	**230 U**	150 U	**320 U**	**200 U**	38 U	120 J	38 J	79
Benzo(a)anthracene	110	**920**	**300**	**410**	**320**	**440**	**230**	**230 U**	**230**	**320 U**	**320**	38 U	**3,400**	**530**	**820**
Benzo(a)pyrene	150	**1,300**	**510**	**750**	**430**	**600**	**280**	**230 U**	**300**	**320 U**	**320**	38 U	**4,000**	**710**	**1,100**
Benzo(b)fluoranthene	NA	2,200	990	1,600	750	1,000	490	360	600	520	500	38 U	7,000	1,200	1,800
Benzo(k)fluoranthene	NA	660	260	400	220	350	180 U	230 U	150	320 U	200 U	38 U	2,800	400	520
Chrysene	170	**1,400**	**610**	**980**	**490**	**660**	**340**	**250**	**350**	**350**	**360**	38 U	**5,200**	**820**	**1,400**
Acenaphthylene	NA	74	86 U	300 U	120 U	57	180 U	230 U	150 U	320 U	200 U	38 U	350	91	190
Anthracene	57	**1,300**	**86 U**	**300 U**	**120 U**	**65**	**180 U**	**230 U**	**150 U**	**320 U**	**200 U**	38 U	**520**	**100**	**260**
Benzo(ghi)perylene	NA	1,200	470	800	350	490	240	230 U	270	320 U	220	38 U	3,400	590	900
Fluorene	77	**46**	**90**	**300**	**120 U**	32	**180 U**	**230 U**	**150 U**	**320 U**	**200 U**	38 U	**270**	**56 J**	**88**
Phenanthrene	200	**1,200**	**550**	**980**	**380**	**500**	**300**	**350**	**280**	**410**	**240**	38 U	**3,300**	**430**	**700**
Dibenzo(a,h)anthracene	33	**230**	**96**	**300 U**	**120 U**	**100**	**180 U**	**230 U**	**150 U**	**320 U**	**200 U**	**38 U**	690	120	210
Indeno(1,2,3-cd)pyrene	NA	1,400	580	940	430	550	290	230 U	330	330	240	38 U	3,700	650	1,100
Pyrene	200	**2,400**	**930**	**1,600**	**700**	**910**	**500**	**460**	**500**	**600**	**470**	38 U	**8,300**	**1,300**	**2,000**
2-Methylnaphthalene	NA	30 U	86 U	300 U	120 U	21 U	180 U	230 U	150 U	320 U	200 U	38 U	62 J	18 J	38
MCP TOTAL METALS															
Lead, Total	130,000	14,800	**240,000**	108,000	**371,000**	107,000	**241,000**	**184,000**	**198,000**	119,000	**196,000**	66,000	**277,000**	**406,000**	**318,000**
GENERAL CHEMISTRY															
Solids, Total		63	22	6	16	31	11	9	12	6	10	51	21	10	18

ug/kg = microgram per kilogram
Bold = Sample exceeds sediment screening criteria
U = Sample not detected above the laboratory reporting limit

Table 7: Historic Surface Water Results
Cape Cod Gateway Airport
Hyannis, Massachusetts

			SURFACE WATER SAMPLING DATA															STORMWATER DISCHARGE SAMPLING DATA					
			Lewis Pond					Upper Gate Pond					Mary Dunn Pond			Fresh Pond		Upper Gate Pond - Outfall B					Lewis Pond - Outfall D
Parameter	**Units**	**Water Quality Criteria [1]**	**1972[2]**	**1984[3]**	**10/1/2001[4]**	**4/15/2002[4]**	**10/20/2005[5]**	**1972[2]**	**1984[3]**	**10/1/2001[4]**	**4/15/2002[4]**	**10/20/2005[5]**	**10/1/2001[4]**	**4/15/2002[4]**	**10/20/2005[5]**	**10/1/2001[4]**	**4/15/2002[4]**	**10/1/2001[4]**	**11/9/2001[4]**	**4/15/2002[4]**	**8/20/2002[5]**	**8/30/2002[5]**	**4/15/2002[4]**
METALS																							
Arsenic	mg/L	n/a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
Barium	mg/L	n/a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
Chromium	mg/L	n/a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
Lead	mg/L	0.0025	NA	NA	NA	NA	**0.0052**	NA	NA	NA	NA	**0.0054**	NA	NA	**0.0058**	NA	NA	NA	NA	NA	**0.12 (0.04)**	ND	NA
PHYSICAL PROPERTIES AND NUTRIENTS																							
Turbidity	NTU	n/a	4	NA	4.2	3.8	NA	8	NA	3.2	2.3	NA	2.0	2.0	NA	16	12	9.9	12	45	NA	NA	3.9
Total alkalinity (CaCO3)	mg/L	20	**22**	NA	3.6	4.2	NA	16	NA	2.2	3.4	NA	ND	ND	NA	5.8	2.0	ND	ND	2.7	NA	NA	5
TSS	mg/L	n/a	NA	NA	ND	5	ND	NA	NA	ND	ND	5	ND	ND	ND	14	14	ND	9.5	72	NA	NA	5.9
Chloride	mg/L	230	21	3.6	1.8	3.1	NA	18	3.6	3.2	6.0	NA	18	15	NA	24	14	24	12	3.4	NA	NA	3.9
Ammonia-N	mg/L	n/a	NA	0.25	ND	ND	NA	NA	0.15	ND	ND	NA	ND	ND	NA	ND	0.128	ND	1.09	0.554	NA	NA	0.295
Nitrate-N	mg/L	n/a	NA	<0.05	ND	ND	NA	NA	0.17	ND	ND	NA	ND	ND	NA	ND	0.12	0.57	2.7	0.2	3.21	0.37	0.3
Nitrite-N	mg/L	n/a	NA	<0.05	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.02	0.01	NA
TKN-N	mg/L	n/a	NA	NA	0.61	0.84	NA	NA	NA	1.1	0.53	NA	0.58	0.5	NA	1.6	0.98	1	1.6	0.93	5	0.4	0.48
Total phosphorus-P/Total phosphate	mg/L	n/a	NA	NA	0.02	0.05 (0.06)	NA	NA	NA	0.07	0.01 (0.02)	NA	ND	ND	NA	0.08	0.04	0.08	0.08	0.12	0.2	0.06	0.01
Orthophosphate-P/Orthophosphorus	mg/L	n/a	NA	NA	ND	0.19 (ND)	NA	NA	NA	ND	0.16 (ND)	NA	ND	0.01	NA	ND	0.04	0.01	0.02	ND	0.3	ND	ND
COD	mg/L	n/a	NA	NA	ND	ND	NA	NA	NA	47	ND	NA	ND	ND	NA	44	22	26	24	60	NA	NA	ND
TOC	mg/L	n/a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	51	4.6	NA
Total phenolics	mg/L	n/a	NA	NA	0.05	ND	NA	NA	NA	ND	ND	NA	ND	ND	NA	0.03	ND	ND	0.03	ND	NA	NA	ND
Total Iron	mg/L	1.0	0.05	NA	0.63	0.38	NA	**1.4**	NA	**1.6**	0.38	NA	0.21	0.32	NA	0.31	0.39	0.2	0.5	**1.1**	NA	NA	0.17
ORGANICS																							
Mineral Spirits	mg/L	n/a	NA	NA	ND	ND	NA	NA	NA	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	ND
Gasoline	mg/L	n/a	NA	NA	ND	ND	NA	NA	NA	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	ND
Fuel oil #2/Diesel	mg/L	n/a	NA	NA	ND	ND	NA	NA	NA	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	ND
Fuel oil #4	mg/L	n/a	NA	NA	ND	ND	NA	NA	NA	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	ND
Fuel oil #6	mg/L	n/a	NA	NA	ND	ND	NA	NA	NA	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	ND
Motor oil	mg/L	n/a	NA	NA	ND	ND	NA	NA	NA	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	ND
Kerosene	mg/L	n/a	NA	NA	ND	ND	NA	NA	NA	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	ND
Transformer oil	mg/L	n/a	NA	NA	ND	ND	NA	NA	NA	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	ND
Unknown hydrocarbons	mg/L	n/a	NA	NA	0.16	0.19	NA	NA	NA	0.19	1.0	NA	ND	ND	NA	0.45	0.36	0.57	0.72	0.78	NA	NA	0.2
VOCs by 8260	µg/L	n/a	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NM	ND	NA	NA	ND	NA	NA	ND	ND	ND	ND
EPH/PAH and targets - all	mg/L	n/a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
Selected PAHs	mg/L	n/a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
Acenapthene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	µg/L	n/a	NA	NA	NA	NA	0.31	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (a) anthracene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (a) pyrene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b) fluoranthene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (k) fluoranthene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)Pyrene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	µg/L	n/a	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	<0.20	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:

1. Aquatic Life Freshwater Chronic Criteria, derived from EPA's *National Recommended Water Quality Criteria (2002), EPA 822-R-02-047* , and summarized at: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#altable.
2. 1972 sampling data from Edward and Kelcey 1987 Groundwater Management Study
3. 1984 sampling data from 1984 DEIR for Runway 15-33 Extension
4. 2001 and 2002 data from Baystate Environmental Consultants 2003 DEIR
5. 2002 and 2005 sampling conducted by Horsley Witten Group, Inc.
6. NA = not analyzed
7. ND = not detected above the laboratory reporting limit, reporting limit unavailable
8. Concentrations in parentheses indicate sample was rerun and duplicate values are provided
9. "<" = not detected above the laboratory reporting limit, reporting limit provided

ATTACHMENT 1

Email From MassDEP seperating the ponds from the North Ramp

From: Gallagher, Angela (DEP)
To: Mark Nelson
Subject: Fw: new RTN needed
Date: Thursday, June 25, 2020 11:46:05 AM

The new RTN for the airport is 4-0028359. You will have to submit an RNF using the RTN listed here. I believe you can upload the eDEP form and I shouldn't have to do anything to open the RTN. However, that isn't always the case so I guess we can cross our fingers and hope for the best.

For the dates to be input into the form, I noticed that one of the older reports discusses the storm water issue and even says something about waiting for MassDEP input. I should have noted what report I looked at. I guess it's up to you to figure out which dates you want to input.

Perhaps we can talk around 2 pm today?

Angela Gallagher
Bureau of Waste Site Cleanup
MassDEP
20 Riverside Drive
Lakeville, MA 02347
508-946-2790

From: Crafton, Daniel (DEP)
Sent: Thursday, June 25, 2020 11:33 AM
To: Gallagher, Angela (DEP)
Subject: RE: new RTN needed

Typically, for 120 days, the PRP has to submit the RNF without the RTN and then we assign it. The RTN for this one will be 4-28359. Make sure when they submit the RNF that they use this RTN.

ATTACHMENT 2

Laboratory Results

ANALYTICAL REPORT

Lab Number:	L2144221
Client:	Horseley & Witten, Inc. Sextant Hill Office Park 90 Route 6A Sandwich, MA 02563
ATTN:	Brian Massa
Phone:	(508) 833-6600
Project Name:	CAPE COD GATEWAY AIRPORT
Project Number:	21083
Report Date:	08/24/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: 21083

Lab Number: L2144221
Report Date: 08/24/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2144221-01	UG-11	SOIL	HYANNIS, MA	08/06/21 09:50	08/09/21
L2144221-02	UG-11A	SOIL	HYANNIS, MA	08/06/21 10:05	08/09/21
L2144221-03	UG-11B	SOIL	HYANNIS, MA	08/06/21 10:20	08/09/21

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2144221

Project Number: 21083 **Report Date:** 08/24/21

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name:	CAPE COD GATEWAY AIRPORT	**Lab Number:**	L2144221
Project Number:	21083	**Report Date:**	08/24/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	CAPE COD GATEWAY AIRPORT	**Lab Number:**	L2144221
Project Number:	21083	**Report Date:**	08/24/21

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

MCP Related Narratives

Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Total Metals.

Semivolatile Organics

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

Total Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Jennifer L Clements

Title: Technical Director/Representative Date: 08/24/21

QC OUTLIER SUMMARY REPORT

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: 21083

Lab Number: L2144221
Report Date: 08/24/21

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment

There are no QC Outliers associated with this report.

ORGANICS

SEMIVOLATILES

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2144221

Project Number: 21083 **Report Date:** 08/24/21

SAMPLE RESULTS

Lab ID: L2144221-01 D
Client ID: UG-11
Sample Location: HYANNIS, MA

Date Collected: 08/06/21 09:50
Date Received: 08/09/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/24/21 15:21
Analyst: RP
Percent Solids: 21%

Extraction Method: EPA 3546
Extraction Date: 08/19/21 01:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Acenaphthene	110	J	ug/kg	160	33.	5
Fluoranthene	10000		ug/kg	160	11.	5
Naphthalene	120	J	ug/kg	160	28.	5
Benzo(a)anthracene	3400		ug/kg	160	15.	5
Benzo(a)pyrene	4000		ug/kg	160	19.	5
Benzo(b)fluoranthene	7000		ug/kg	160	15.	5
Benzo(k)fluoranthene	2800		ug/kg	160	14.	5
Chrysene	5200		ug/kg	160	12.	5
Acenaphthylene	350		ug/kg	160	19.	5
Anthracene	520		ug/kg	160	12.	5
Benzo(ghi)perylene	3400		ug/kg	160	13.	5
Fluorene	270		ug/kg	160	19.	5
Phenanthrene	3300		ug/kg	160	13.	5
Dibenzo(a,h)anthracene	690		ug/kg	160	16.	5
Indeno(1,2,3-cd)pyrene	3700		ug/kg	160	19.	5
Pyrene	8300		ug/kg	160	11.	5
2-Methylnaphthalene	62	J	ug/kg	160	44.	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		30-130
2-Fluorobiphenyl	55		30-130
4-Terphenyl-d14	57		30-130

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2144221

Project Number: 21083 **Report Date:** 08/24/21

SAMPLE RESULTS

Lab ID: L2144221-02
Client ID: UG-11A
Sample Location: HYANNIS, MA

Date Collected: 08/06/21 10:05
Date Received: 08/09/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/24/21 16:59
Analyst: RP
Percent Solids: 10%

Extraction Method: EPA 3546
Extraction Date: 08/19/21 01:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Acenaphthene	23	J	ug/kg	64	14.	1
Fluoranthene	1500		ug/kg	64	4.5	1
Naphthalene	38	J	ug/kg	64	12.	1
Benzo(a)anthracene	530		ug/kg	64	6.1	1
Benzo(a)pyrene	710		ug/kg	64	7.8	1
Benzo(b)fluoranthene	1200		ug/kg	64	6.1	1
Benzo(k)fluoranthene	400		ug/kg	64	5.8	1
Chrysene	820		ug/kg	64	4.8	1
Acenaphthylene	91		ug/kg	64	8.1	1
Anthracene	100		ug/kg	64	5.2	1
Benzo(ghi)perylene	590		ug/kg	64	5.5	1
Fluorene	56	J	ug/kg	64	7.8	1
Phenanthrene	430		ug/kg	64	5.5	1
Dibenzo(a,h)anthracene	120		ug/kg	64	6.4	1
Indeno(1,2,3-cd)pyrene	650		ug/kg	64	7.8	1
Pyrene	1300		ug/kg	64	4.5	1
2-Methylnaphthalene	18	J	ug/kg	64	18.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	97		30-130
2-Fluorobiphenyl	41		30-130
4-Terphenyl-d14	31		30-130

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2144221

Project Number: 21083 **Report Date:** 08/24/21

SAMPLE RESULTS

Lab ID: L2144221-03
Client ID: UG-11B
Sample Location: HYANNIS, MA

Date Collected: 08/06/21 10:20
Date Received: 08/09/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/19/21 16:07
Analyst: DV
Percent Solids: 18%

Extraction Method: EPA 3546
Extraction Date: 08/19/21 01:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Acenaphthene	46		ug/kg	36	7.5	1
Fluoranthene	2200		ug/kg	36	2.5	1
Naphthalene	79		ug/kg	36	6.4	1
Benzo(a)anthracene	820		ug/kg	36	3.4	1
Benzo(a)pyrene	1100		ug/kg	36	4.3	1
Benzo(b)fluoranthene	1800		ug/kg	36	3.4	1
Benzo(k)fluoranthene	520		ug/kg	36	3.2	1
Chrysene	1400		ug/kg	36	2.7	1
Acenaphthylene	190		ug/kg	36	4.4	1
Anthracene	260		ug/kg	36	2.8	1
Benzo(ghi)perylene	900		ug/kg	36	3.0	1
Fluorene	88		ug/kg	36	4.3	1
Phenanthrene	700		ug/kg	36	3.0	1
Dibenzo(a,h)anthracene	210		ug/kg	36	3.6	1
Indeno(1,2,3-cd)pyrene	1100		ug/kg	36	4.3	1
Pyrene	2000		ug/kg	36	2.5	1
2-Methylnaphthalene	38		ug/kg	36	10.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	61		30-130
2-Fluorobiphenyl	34		30-130
4-Terphenyl-d14	42		30-130

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: 21083
Lab Number: L2144221
Report Date: 08/24/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D-SIM
Analytical Date: 08/24/21 15:05
Analyst: RP

Extraction Method: EPA 3546
Extraction Date: 08/19/21 01:05

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics by SIM - Westborough Lab for sample(s): 01-03 Batch: WG1536708-1					
Acenaphthene	ND		ug/kg	6.6	1.4
Fluoranthene	ND		ug/kg	6.6	0.46
Naphthalene	ND		ug/kg	6.6	1.2
Benzo(a)anthracene	ND		ug/kg	6.6	0.63
Benzo(a)pyrene	ND		ug/kg	6.6	0.79
Benzo(b)fluoranthene	ND		ug/kg	6.6	0.63
Benzo(k)fluoranthene	ND		ug/kg	6.6	0.59
Chrysene	ND		ug/kg	6.6	0.49
Acenaphthylene	ND		ug/kg	6.6	0.82
Anthracene	ND		ug/kg	6.6	0.53
Benzo(ghi)perylene	ND		ug/kg	6.6	0.56
Fluorene	ND		ug/kg	6.6	0.79
Phenanthrene	ND		ug/kg	6.6	0.56
Dibenzo(a,h)anthracene	ND		ug/kg	6.6	0.66
Indeno(1,2,3-cd)pyrene	ND		ug/kg	6.6	0.79
Pyrene	ND		ug/kg	6.6	0.46
2-Methylnaphthalene	ND		ug/kg	6.6	1.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	74		30-130
2-Fluorobiphenyl	52		30-130
4-Terphenyl-d14	58		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: 21083

Lab Number: L2144221
Report Date: 08/24/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics by SIM - Westborough Lab Associated sample(s): 01-03 Batch: WG1536708-2 WG1536708-3								
Acenaphthene	63		69		40-140	9		30
Fluoranthene	69		74		40-140	7		30
Naphthalene	61		65		40-140	6		30
Benzo(a)anthracene	68		72		40-140	6		30
Benzo(a)pyrene	73		80		40-140	9		30
Benzo(b)fluoranthene	73		77		40-140	5		30
Benzo(k)fluoranthene	72		81		40-140	12		30
Chrysene	67		72		40-140	7		30
Acenaphthylene	62		66		40-140	6		30
Anthracene	65		70		40-140	7		30
Benzo(ghi)perylene	68		75		40-140	10		30
Fluorene	64		69		40-140	8		30
Phenanthrene	64		69		40-140	8		30
Dibenzo(a,h)anthracene	70		77		40-140	10		30
Indeno(1,2,3-cd)pyrene	73		81		40-140	10		30
Pyrene	69		74		40-140	7		30
2-Methylnaphthalene	59		63		40-140	7		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: 21083

Lab Number: L2144221
Report Date: 08/24/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics by SIM - Westborough Lab Associated sample(s): 01-03 Batch: WG1536708-2 WG1536708-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	79		84		30-130
2-Fluorobiphenyl	54		59		30-130
4-Terphenyl-d14	59		63		30-130

METALS

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2144221

Project Number: 21083 **Report Date:** 08/24/21

SAMPLE RESULTS

Lab ID: L2144221-01 Date Collected: 08/06/21 09:50

Client ID: UG-11 Date Received: 08/09/21

Sample Location: HYANNIS, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 21%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	277		mg/kg	9.04	0.485	1	08/19/21 22:10	08/23/21 23:07	EPA 3050B	97,6010D	DL

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2144221

Project Number: 21083 **Report Date:** 08/24/21

SAMPLE RESULTS

Lab ID: L2144221-02 Date Collected: 08/06/21 10:05

Client ID: UG-11A Date Received: 08/09/21

Sample Location: HYANNIS, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 10%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	406		mg/kg	18.9	1.02	1	08/19/21 22:10	08/23/21 23:34	EPA 3050B	97,6010D	DL

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2144221

Project Number: 21083 **Report Date:** 08/24/21

SAMPLE RESULTS

Lab ID: L2144221-03 Date Collected: 08/06/21 10:20

Client ID: UG-11B Date Received: 08/09/21

Sample Location: HYANNIS, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 18%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	318		mg/kg	10.5	0.565	1	08/19/21 22:10	08/23/21 23:38	EPA 3050B	97,6010D	DL

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2144221

Project Number: 21083 **Report Date:** 08/24/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1537019-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	08/19/21 22:10	08/23/21 23:20	97,6010D	DL

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT

Project Number: 21083

Lab Number: L2144221

Report Date: 08/24/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1537019-2 WG1537019-3 SRM Lot Number: D109-540								
Lead, Total	99		105		72-128	6		30

INORGANICS
&
MISCELLANEOUS

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: 21083
Lab Number: L2144221
Report Date: 08/24/21

SAMPLE RESULTS

Lab ID: L2144221-01
Client ID: UG-11
Sample Location: HYANNIS, MA
Sample Depth:
Matrix: Soil

Date Collected: 08/06/21 09:50
Date Received: 08/09/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	21.2		%	0.100	NA	1	-	08/18/21 11:43	121,2540G	RI

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: 21083
Lab Number: L2144221
Report Date: 08/24/21

SAMPLE RESULTS

Lab ID: L2144221-02
Client ID: UG-11A
Sample Location: HYANNIS, MA
Sample Depth:
Matrix: Soil

Date Collected: 08/06/21 10:05
Date Received: 08/09/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	10.1		%	0.100	NA	1	-	08/18/21 11:43	121,2540G	RI

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: 21083
Lab Number: L2144221
Report Date: 08/24/21

SAMPLE RESULTS

Lab ID: L2144221-03
Client ID: UG-11B
Sample Location: HYANNIS, MA
Sample Depth:
Matrix: Soil

Date Collected: 08/06/21 10:20
Date Received: 08/09/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	18.2		%	0.100	NA	1	-	08/18/21 11:43	121,2540G	RI

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: 21083

Lab Number: L2144221
Report Date: 08/24/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2144221-01B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.0	Y	Absent		MCP-PB-6010T-10(180)
L2144221-01C	Glass 120ml/4oz unpreserved	A	NA		3.0	Y	Absent		TS(7),MCP-PAHSIM-10(14)
L2144221-02B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.0	Y	Absent		MCP-PB-6010T-10(180)
L2144221-02C	Glass 120ml/4oz unpreserved	A	NA		3.0	Y	Absent		TS(7),MCP-PAHSIM-10(14)
L2144221-03B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.0	Y	Absent		MCP-PB-6010T-10(180)
L2144221-03C	Glass 120ml/4oz unpreserved	A	NA		3.0	Y	Absent		TS(7),MCP-PAHSIM-10(14)

*Values in parentheses indicate holding time in days

Project Name:	CAPE COD GATEWAY AIRPORT	**Lab Number:**	L2144221
Project Number:	21083	**Report Date:**	08/24/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	CAPE COD GATEWAY AIRPORT	**Lab Number:**	L2144221
Project Number:	21083	**Report Date:**	08/24/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	CAPE COD GATEWAY AIRPORT	**Lab Number:**	L2144221
Project Number:	21083	**Report Date:**	08/24/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	CAPE COD GATEWAY AIRPORT	**Lab Number:**	L2144221
Project Number:	21083	**Report Date:**	08/24/21

REFERENCES

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

L2144221 CF 8/17/21

Date Rec'd in Lab: 08/09/21

ALPHA Job #: L2142562

8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: Horsley Witten Group
Address: 90 Route 6A
Sandwich, MA 02563
Phone: (508) 833-6600
Email: bmassa@horsleywitten.com

Additional Project Information:

Project Information

Project Name: Cape Cod Gateway Airport
Project Location: Hyannis, MA
Project #: 21093
Project Manager: Bryan Massa
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☑ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☑ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ~~☐ 8270~~ ☐ PAH EPA 625 ☐ 8270D	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	~~Total Solids~~ - 300.2540	Total Lead - 6010D	PAH-SIM	PCB	SAMPLE INFO: Filtration ☐ Field ☐ Lab to do; Preservation ☐ Lab to do	Sample Comments	TOTAL # BOTTLES
~~42562-01~~ 44221-01	VG-11	8/6/21	9:30	Soil	SB		✓						✓	✓	X	X			HOLD	3
44221-02	VG-11A	8/6/21	10:05	Soil	SB		✓						✓	✓	X	X			HOLD	3
-03	VG-11B	8/6/21	10:20	Soil	SB		✓						✓	✓	X	X			HOLD	3
~~-04~~	VG-Comp1	8/6/21	9:50-10:20	Soil	SB		✓						✓	✓						3
Container Type																				
Preservative							/						/	/						

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_3$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	8/9 15:30	[signature]	8/9/21 1530
[signature]	8/9/21 1740	[signature]	8/9/21 1740

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L2141856
Client:	Horseley & Witten, Inc. Sextant Hill Office Park 90 Route 6A Sandwich, MA 02563
ATTN:	Brian Massa
Phone:	(508) 833-6600
Project Name:	CAPE COD GATEWAY AIRPORT
Project Number:	Not Specified
Report Date:	08/19/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2141856-01	LP-1	SOIL	HYANNIS, MA	08/02/21 11:25	08/05/21
L2141856-02	LP-10	SOIL	HYANNIS, MA	08/02/21 11:35	08/05/21
L2141856-03	LP-9	SOIL	HYANNIS, MA	08/02/21 11:45	08/05/21
L2141856-04	LP-7	SOIL	HYANNIS, MA	08/02/21 11:55	08/05/21
L2141856-05	LP-COMP 1	SOIL	HYANNIS, MA	08/02/21 11:25	08/05/21
L2141856-06	LP-5	SOIL	HYANNIS, MA	08/02/21 12:10	08/05/21
L2141856-07	LP-4	SOIL	HYANNIS, MA	08/02/21 12:20	08/05/21
L2141856-08	LP-3	SOIL	HYANNIS, MA	08/02/21 12:32	08/05/21
L2141856-09	LP-6	SOIL	HYANNIS, MA	08/02/21 12:43	08/05/21
L2141856-10	LP-COMP 2	SOIL	HYANNIS, MA	08/02/21 12:10	08/05/21
L2141856-11	MD-1	SOIL	HYANNIS, MA	08/02/21 16:20	08/05/21
L2141856-12	MD-2	SOIL	HYANNIS, MA	08/02/21 16:42	08/05/21
L2141856-13	MD-3	SOIL	HYANNIS, MA	08/02/21 16:57	08/05/21
L2141856-14	MD-4	SOIL	HYANNIS, MA	08/02/21 17:10	08/05/21
L2141856-15	MD-COMP	SOIL	HYANNIS, MA	08/02/21 16:20	08/05/21

Project Name:	CAPE COD GATEWAY AIRPORT	**Lab Number:**	L2141856
Project Number:	Not Specified	**Report Date:**	08/19/21

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name:	CAPE COD GATEWAY AIRPORT	**Lab Number:**	L2141856
Project Number:	Not Specified	**Report Date:**	08/19/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	CAPE COD GATEWAY AIRPORT	**Lab Number:**	L2141856
Project Number:	Not Specified	**Report Date:**	08/19/21

Case Narrative (continued)

Report Submission

August 19, 2021: This final report includes the results of all requested analyses.

August 12, 2021: This is a preliminary report.

MCP Related Narratives

Sample Receipt

The analyses performed were specified by the client.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Total Metals.

PAHs by SIM

L2141856-01, -02, -03, -04, -06, -07, -08, -09, -10, and -15: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

In reference to question G:

L2141856-01, -02, -03, -04, -06, -07, -08, -09, -10, and -15: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question I:

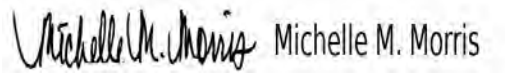
All samples were analyzed for a subset of MCP analytes per client request.

Total Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Michelle M. Morris

Title: Technical Director/Representative Date: 08/19/21

QC OUTLIER SUMMARY REPORT

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
MCP Semivolatile Organics by SIM - Westborough Lab								
8270D-SIM	Batch QC	WG1533821-2	Nitrobenzene-d5	Surrogate	135	30-130	-	potential high bias

ORGANICS

SEMIVOLATILES

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-01
Client ID: LP-1
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 11:25
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/15/21 20:24
Analyst: DV
Percent Solids: 63%

Extraction Method: EPA 3546
Extraction Date: 08/14/21 16:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Acenaphthene	30		ug/kg	30	--	1
Fluoranthene	3100	E	ug/kg	30	--	1
Naphthalene	ND		ug/kg	30	--	1
Benzo(a)anthracene	920		ug/kg	30	--	1
Benzo(a)pyrene	1300		ug/kg	30	--	1
Benzo(b)fluoranthene	2200		ug/kg	30	--	1
Benzo(k)fluoranthene	660		ug/kg	30	--	1
Chrysene	1400		ug/kg	30	--	1
Acenaphthylene	74		ug/kg	30	--	1
Anthracene	1300		ug/kg	30	--	1
Benzo(ghi)perylene	1200		ug/kg	30	--	1
Fluorene	46		ug/kg	30	--	1
Phenanthrene	1200		ug/kg	30	--	1
Dibenzo(a,h)anthracene	230		ug/kg	30	--	1
Indeno(1,2,3-cd)pyrene	1400		ug/kg	30	--	1
Pyrene	2400		ug/kg	30	--	1
2-Methylnaphthalene	ND		ug/kg	30	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	111		30-130
2-Fluorobiphenyl	85		30-130
4-Terphenyl-d14	85		30-130

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-01 D
Client ID: LP-1
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 11:25
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/18/21 16:25
Analyst: DV
Percent Solids: 63%

Extraction Method: EPA 3546
Extraction Date: 08/14/21 16:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Fluoranthene	2800		ug/kg	60	--	2

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2141856

Project Number: Not Specified **Report Date:** 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-02
Client ID: LP-10
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 11:35
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/15/21 20:41
Analyst: DV
Percent Solids: 22%

Extraction Method: EPA 3546
Extraction Date: 08/14/21 16:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Acenaphthene	ND		ug/kg	86	--	1
Fluoranthene	1200		ug/kg	86	--	1
Naphthalene	ND		ug/kg	86	--	1
Benzo(a)anthracene	300		ug/kg	86	--	1
Benzo(a)pyrene	510		ug/kg	86	--	1
Benzo(b)fluoranthene	990		ug/kg	86	--	1
Benzo(k)fluoranthene	260		ug/kg	86	--	1
Chrysene	610		ug/kg	86	--	1
Acenaphthylene	ND		ug/kg	86	--	1
Anthracene	ND		ug/kg	86	--	1
Benzo(ghi)perylene	470		ug/kg	86	--	1
Fluorene	90		ug/kg	86	--	1
Phenanthrene	550		ug/kg	86	--	1
Dibenzo(a,h)anthracene	96		ug/kg	86	--	1
Indeno(1,2,3-cd)pyrene	580		ug/kg	86	--	1
Pyrene	930		ug/kg	86	--	1
2-Methylnaphthalene	ND		ug/kg	86	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	104		30-130
2-Fluorobiphenyl	68		30-130
4-Terphenyl-d14	65		30-130

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2141856

Project Number: Not Specified **Report Date:** 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-03
Client ID: LP-9
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 11:45
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/15/21 20:57
Analyst: DV
Percent Solids: 6%

Extraction Method: EPA 3546
Extraction Date: 08/14/21 16:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Acenaphthene	ND		ug/kg	300	--	1
Fluoranthene	2100		ug/kg	300	--	1
Naphthalene	ND		ug/kg	300	--	1
Benzo(a)anthracene	410		ug/kg	300	--	1
Benzo(a)pyrene	750		ug/kg	300	--	1
Benzo(b)fluoranthene	1600		ug/kg	300	--	1
Benzo(k)fluoranthene	400		ug/kg	300	--	1
Chrysene	980		ug/kg	300	--	1
Acenaphthylene	ND		ug/kg	300	--	1
Anthracene	ND		ug/kg	300	--	1
Benzo(ghi)perylene	800		ug/kg	300	--	1
Fluorene	300		ug/kg	300	--	1
Phenanthrene	980		ug/kg	300	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	300	--	1
Indeno(1,2,3-cd)pyrene	940		ug/kg	300	--	1
Pyrene	1600		ug/kg	300	--	1
2-Methylnaphthalene	ND		ug/kg	300	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	55		30-130
2-Fluorobiphenyl	31		30-130
4-Terphenyl-d14	36		30-130

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2141856

Project Number: Not Specified **Report Date:** 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-04
Client ID: LP-7
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 11:55
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/15/21 21:13
Analyst: DV
Percent Solids: 16%

Extraction Method: EPA 3546
Extraction Date: 08/14/21 16:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Acenaphthene	ND		ug/kg	120	--	1
Fluoranthene	860		ug/kg	120	--	1
Naphthalene	ND		ug/kg	120	--	1
Benzo(a)anthracene	320		ug/kg	120	--	1
Benzo(a)pyrene	430		ug/kg	120	--	1
Benzo(b)fluoranthene	750		ug/kg	120	--	1
Benzo(k)fluoranthene	220		ug/kg	120	--	1
Chrysene	490		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	120	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	350		ug/kg	120	--	1
Fluorene	ND		ug/kg	120	--	1
Phenanthrene	380		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)pyrene	430		ug/kg	120	--	1
Pyrene	700		ug/kg	120	--	1
2-Methylnaphthalene	ND		ug/kg	120	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	104		30-130
2-Fluorobiphenyl	65		30-130
4-Terphenyl-d14	55		30-130

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-05
Client ID: LP-COMP 1
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 11:25
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/12/21 15:05
Analyst: DV
Percent Solids: 31%

Extraction Method: EPA 3546
Extraction Date: 08/11/21 09:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Acenaphthene	ND		ug/kg	21	--	1
Fluoranthene	1200		ug/kg	21	--	1
Naphthalene	ND		ug/kg	21	--	1
Benzo(a)anthracene	440		ug/kg	21	--	1
Benzo(a)pyrene	600		ug/kg	21	--	1
Benzo(b)fluoranthene	1000		ug/kg	21	--	1
Benzo(k)fluoranthene	350		ug/kg	21	--	1
Chrysene	660		ug/kg	21	--	1
Acenaphthylene	57		ug/kg	21	--	1
Anthracene	65		ug/kg	21	--	1
Benzo(ghi)perylene	490		ug/kg	21	--	1
Fluorene	32		ug/kg	21	--	1
Phenanthrene	500		ug/kg	21	--	1
Dibenzo(a,h)anthracene	100		ug/kg	21	--	1
Indeno(1,2,3-cd)pyrene	550		ug/kg	21	--	1
Pyrene	910		ug/kg	21	--	1
2-Methylnaphthalene	ND		ug/kg	21	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	106		30-130
2-Fluorobiphenyl	61		30-130
4-Terphenyl-d14	52		30-130

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-06
Client ID: LP-5
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 12:10
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/15/21 21:30
Analyst: DV
Percent Solids: 11%

Extraction Method: EPA 3546
Extraction Date: 08/14/21 16:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Acenaphthene	ND		ug/kg	180	--	1
Fluoranthene	600		ug/kg	180	--	1
Naphthalene	400		ug/kg	180	--	1
Benzo(a)anthracene	230		ug/kg	180	--	1
Benzo(a)pyrene	280		ug/kg	180	--	1
Benzo(b)fluoranthene	490		ug/kg	180	--	1
Benzo(k)fluoranthene	ND		ug/kg	180	--	1
Chrysene	340		ug/kg	180	--	1
Acenaphthylene	ND		ug/kg	180	--	1
Anthracene	ND		ug/kg	180	--	1
Benzo(ghi)perylene	240		ug/kg	180	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	300		ug/kg	180	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	180	--	1
Indeno(1,2,3-cd)pyrene	290		ug/kg	180	--	1
Pyrene	500		ug/kg	180	--	1
2-Methylnaphthalene	ND		ug/kg	180	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	100		30-130
2-Fluorobiphenyl	60		30-130
4-Terphenyl-d14	45		30-130

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-07
Client ID: LP-4
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 12:20
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/15/21 21:46
Analyst: DV
Percent Solids: 9%

Extraction Method: EPA 3546
Extraction Date: 08/14/21 16:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Acenaphthene	ND		ug/kg	230	--	1
Fluoranthene	580		ug/kg	230	--	1
Naphthalene	ND		ug/kg	230	--	1
Benzo(a)anthracene	ND		ug/kg	230	--	1
Benzo(a)pyrene	ND		ug/kg	230	--	1
Benzo(b)fluoranthene	360		ug/kg	230	--	1
Benzo(k)fluoranthene	ND		ug/kg	230	--	1
Chrysene	250		ug/kg	230	--	1
Acenaphthylene	ND		ug/kg	230	--	1
Anthracene	ND		ug/kg	230	--	1
Benzo(ghi)perylene	ND		ug/kg	230	--	1
Fluorene	ND		ug/kg	230	--	1
Phenanthrene	350		ug/kg	230	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	230	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	230	--	1
Pyrene	460		ug/kg	230	--	1
2-Methylnaphthalene	ND		ug/kg	230	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	109		30-130
2-Fluorobiphenyl	63		30-130
4-Terphenyl-d14	39		30-130

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-08
Client ID: LP-3
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 12:32
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/15/21 22:02
Analyst: DV
Percent Solids: 12%

Extraction Method: EPA 3546
Extraction Date: 08/14/21 16:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	630		ug/kg	150	--	1
Naphthalene	ND		ug/kg	150	--	1
Benzo(a)anthracene	230		ug/kg	150	--	1
Benzo(a)pyrene	300		ug/kg	150	--	1
Benzo(b)fluoranthene	600		ug/kg	150	--	1
Benzo(k)fluoranthene	150		ug/kg	150	--	1
Chrysene	350		ug/kg	150	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	150	--	1
Benzo(ghi)perylene	270		ug/kg	150	--	1
Fluorene	ND		ug/kg	150	--	1
Phenanthrene	280		ug/kg	150	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	150	--	1
Indeno(1,2,3-cd)pyrene	330		ug/kg	150	--	1
Pyrene	500		ug/kg	150	--	1
2-Methylnaphthalene	ND		ug/kg	150	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		30-130
2-Fluorobiphenyl	45		30-130
4-Terphenyl-d14	56		30-130

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2141856

Project Number: Not Specified **Report Date:** 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-09
Client ID: LP-6
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 12:43
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/15/21 22:18
Analyst: DV
Percent Solids: 6%

Extraction Method: EPA 3546
Extraction Date: 08/14/21 16:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Acenaphthene	ND		ug/kg	320	--	1
Fluoranthene	790		ug/kg	320	--	1
Naphthalene	ND		ug/kg	320	--	1
Benzo(a)anthracene	ND		ug/kg	320	--	1
Benzo(a)pyrene	ND		ug/kg	320	--	1
Benzo(b)fluoranthene	520		ug/kg	320	--	1
Benzo(k)fluoranthene	ND		ug/kg	320	--	1
Chrysene	350		ug/kg	320	--	1
Acenaphthylene	ND		ug/kg	320	--	1
Anthracene	ND		ug/kg	320	--	1
Benzo(ghi)perylene	ND		ug/kg	320	--	1
Fluorene	ND		ug/kg	320	--	1
Phenanthrene	410		ug/kg	320	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	320	--	1
Indeno(1,2,3-cd)pyrene	330		ug/kg	320	--	1
Pyrene	600		ug/kg	320	--	1
2-Methylnaphthalene	ND		ug/kg	320	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	124		30-130
2-Fluorobiphenyl	85		30-130
4-Terphenyl-d14	71		30-130

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2141856

Project Number: Not Specified **Report Date:** 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-10
Client ID: LP-COMP 2
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 12:10
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/09/21 14:10
Analyst: DV
Percent Solids: 10%

Extraction Method: EPA 3546
Extraction Date: 08/07/21 22:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Acenaphthene	ND		ug/kg	200	--	1
Fluoranthene	550		ug/kg	200	--	1
Naphthalene	ND		ug/kg	200	--	1
Benzo(a)anthracene	320		ug/kg	200	--	1
Benzo(a)pyrene	320		ug/kg	200	--	1
Benzo(b)fluoranthene	500		ug/kg	200	--	1
Benzo(k)fluoranthene	ND		ug/kg	200	--	1
Chrysene	360		ug/kg	200	--	1
Acenaphthylene	ND		ug/kg	200	--	1
Anthracene	ND		ug/kg	200	--	1
Benzo(ghi)perylene	220		ug/kg	200	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	240		ug/kg	200	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	200	--	1
Indeno(1,2,3-cd)pyrene	240		ug/kg	200	--	1
Pyrene	470		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		30-130
2-Fluorobiphenyl	61		30-130
4-Terphenyl-d14	53		30-130

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2141856

Project Number: Not Specified **Report Date:** 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-15
Client ID: MD-COMP
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 16:20
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8270D-SIM
Analytical Date: 08/12/21 15:21
Analyst: DV
Percent Solids: 51%

Extraction Method: EPA 3546
Extraction Date: 08/07/21 22:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs by SIM - Westborough Lab						
Acenaphthene	ND		ug/kg	38	--	1
Fluoranthene	ND		ug/kg	38	--	1
Naphthalene	ND		ug/kg	38	--	1
Benzo(a)anthracene	ND		ug/kg	38	--	1
Benzo(a)pyrene	ND		ug/kg	38	--	1
Benzo(b)fluoranthene	ND		ug/kg	38	--	1
Benzo(k)fluoranthene	ND		ug/kg	38	--	1
Chrysene	ND		ug/kg	38	--	1
Acenaphthylene	ND		ug/kg	38	--	1
Anthracene	ND		ug/kg	38	--	1
Benzo(ghi)perylene	ND		ug/kg	38	--	1
Fluorene	ND		ug/kg	38	--	1
Phenanthrene	ND		ug/kg	38	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	38	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	38	--	1
Pyrene	ND		ug/kg	38	--	1
2-Methylnaphthalene	ND		ug/kg	38	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	104		30-130
2-Fluorobiphenyl	85		30-130
4-Terphenyl-d14	69		30-130

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified
Lab Number: L2141856
Report Date: 08/19/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D-SIM
Analytical Date: 08/09/21 10:25
Analyst: DV

Extraction Method: EPA 3546
Extraction Date: 08/07/21 22:10

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics by SIM - Westborough Lab for sample(s): 10,15 Batch: WG1532685-1					
Acenaphthene	ND		ug/kg	6.5	--
Fluoranthene	ND		ug/kg	6.5	--
Naphthalene	ND		ug/kg	6.5	--
Benzo(a)anthracene	ND		ug/kg	6.5	--
Benzo(a)pyrene	ND		ug/kg	6.5	--
Benzo(b)fluoranthene	ND		ug/kg	6.5	--
Benzo(k)fluoranthene	ND		ug/kg	6.5	--
Chrysene	ND		ug/kg	6.5	--
Acenaphthylene	ND		ug/kg	6.5	--
Anthracene	ND		ug/kg	6.5	--
Benzo(ghi)perylene	ND		ug/kg	6.5	--
Fluorene	ND		ug/kg	6.5	--
Phenanthrene	ND		ug/kg	6.5	--
Dibenzo(a,h)anthracene	ND		ug/kg	6.5	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	6.5	--
Pyrene	ND		ug/kg	6.5	--
2-Methylnaphthalene	ND		ug/kg	6.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	47		30-130
2-Fluorobiphenyl	45		30-130
4-Terphenyl-d14	51		30-130

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified
Lab Number: L2141856
Report Date: 08/19/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D-SIM
Analytical Date: 08/12/21 14:48
Analyst: DV

Extraction Method: EPA 3546
Extraction Date: 08/11/21 09:36

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics by SIM - Westborough Lab for sample(s): 05 Batch: WG1533821-1					
Acenaphthene	ND		ug/kg	6.6	--
Fluoranthene	ND		ug/kg	6.6	--
Naphthalene	ND		ug/kg	6.6	--
Benzo(a)anthracene	ND		ug/kg	6.6	--
Benzo(a)pyrene	ND		ug/kg	6.6	--
Benzo(b)fluoranthene	ND		ug/kg	6.6	--
Benzo(k)fluoranthene	ND		ug/kg	6.6	--
Chrysene	ND		ug/kg	6.6	--
Acenaphthylene	ND		ug/kg	6.6	--
Anthracene	ND		ug/kg	6.6	--
Benzo(ghi)perylene	ND		ug/kg	6.6	--
Fluorene	ND		ug/kg	6.6	--
Phenanthrene	ND		ug/kg	6.6	--
Dibenzo(a,h)anthracene	ND		ug/kg	6.6	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	6.6	--
Pyrene	ND		ug/kg	6.6	--
2-Methylnaphthalene	ND		ug/kg	6.6	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	110		30-130
2-Fluorobiphenyl	89		30-130
4-Terphenyl-d14	98		30-130

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2141856

Project Number: Not Specified **Report Date:** 08/19/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D-SIM
Analytical Date: 08/15/21 20:08
Analyst: DV

Extraction Method: EPA 3546
Extraction Date: 08/14/21 16:23

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics by SIM - Westborough Lab for sample(s): 01-04,06-09 Batch: WG1535169-1					
Acenaphthene	ND		ug/kg	19	--
Fluoranthene	ND		ug/kg	19	--
Naphthalene	ND		ug/kg	19	--
Benzo(a)anthracene	ND		ug/kg	19	--
Benzo(a)pyrene	ND		ug/kg	19	--
Benzo(b)fluoranthene	ND		ug/kg	19	--
Benzo(k)fluoranthene	ND		ug/kg	19	--
Chrysene	ND		ug/kg	19	--
Acenaphthylene	ND		ug/kg	19	--
Anthracene	ND		ug/kg	19	--
Benzo(ghi)perylene	ND		ug/kg	19	--
Fluorene	ND		ug/kg	19	--
Phenanthrene	ND		ug/kg	19	--
Dibenzo(a,h)anthracene	ND		ug/kg	19	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	19	--
Pyrene	ND		ug/kg	19	--
2-Methylnaphthalene	ND		ug/kg	19	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	96		30-130
2-Fluorobiphenyl	86		30-130
4-Terphenyl-d14	108		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics by SIM - Westborough Lab Associated sample(s): 10,15 Batch: WG1532685-2 WG1532685-3								
Acenaphthene	67		67		40-140	0		30
Fluoranthene	72		73		40-140	1		30
Naphthalene	66		67		40-140	2		30
Benzo(a)anthracene	68		70		40-140	3		30
Benzo(a)pyrene	76		77		40-140	1		30
Benzo(b)fluoranthene	77		77		40-140	0		30
Benzo(k)fluoranthene	73		75		40-140	3		30
Chrysene	69		71		40-140	3		30
Acenaphthylene	70		71		40-140	1		30
Anthracene	69		70		40-140	1		30
Benzo(ghi)perylene	73		73		40-140	0		30
Fluorene	71		73		40-140	3		30
Phenanthrene	68		69		40-140	1		30
Dibenzo(a,h)anthracene	72		73		40-140	1		30
Indeno(1,2,3-cd)pyrene	76		77		40-140	1		30
Pyrene	71		71		40-140	0		30
2-Methylnaphthalene	65		65		40-140	0		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics by SIM - Westborough Lab Associated sample(s): 10,15 Batch: WG1532685-2 WG1532685-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	64		65		30-130
2-Fluorobiphenyl	62		63		30-130
4-Terphenyl-d14	71		71		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics by SIM - Westborough Lab Associated sample(s): 05 Batch: WG1533821-2 WG1533821-3								
Acenaphthene	107		94		40-140	13		30
Fluoranthene	105		100		40-140	5		30
Naphthalene	116		88		40-140	27		30
Benzo(a)anthracene	107		105		40-140	2		30
Benzo(a)pyrene	116		112		40-140	4		30
Benzo(b)fluoranthene	117		112		40-140	4		30
Benzo(k)fluoranthene	112		109		40-140	3		30
Chrysene	103		99		40-140	4		30
Acenaphthylene	126		94		40-140	29		30
Anthracene	105		101		40-140	4		30
Benzo(ghi)perylene	112		108		40-140	4		30
Fluorene	111		96		40-140	14		30
Phenanthrene	103		98		40-140	5		30
Dibenzo(a,h)anthracene	113		111		40-140	2		30
Indeno(1,2,3-cd)pyrene	122		115		40-140	6		30
Pyrene	103		99		40-140	4		30
2-Methylnaphthalene	117		88		40-140	28		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT

Project Number: Not Specified

Lab Number: L2141856

Report Date: 08/19/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics by SIM - Westborough Lab Associated sample(s): 05 Batch: WG1533821-2 WG1533821-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	**135**	Q	103		30-130
2-Fluorobiphenyl	112		85		30-130
4-Terphenyl-d14	97		93		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics by SIM - Westborough Lab Associated sample(s): 01-04,06-09 Batch: WG1535169-2 WG1535169-3								
Acenaphthene	90		100		40-140	11		30
Fluoranthene	96		109		40-140	13		30
Naphthalene	91		100		40-140	9		30
Benzo(a)anthracene	93		102		40-140	9		30
Benzo(a)pyrene	98		110		40-140	12		30
Benzo(b)fluoranthene	92		101		40-140	9		30
Benzo(k)fluoranthene	93		109		40-140	16		30
Chrysene	86		97		40-140	12		30
Acenaphthylene	99		109		40-140	10		30
Anthracene	95		107		40-140	12		30
Benzo(ghi)perylene	93		104		40-140	11		30
Fluorene	92		102		40-140	10		30
Phenanthrene	90		101		40-140	12		30
Dibenzo(a,h)anthracene	104		117		40-140	12		30
Indeno(1,2,3-cd)pyrene	102		114		40-140	11		30
Pyrene	96		109		40-140	13		30
2-Methylnaphthalene	94		103		40-140	9		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics by SIM - Westborough Lab Associated sample(s): 01-04,06-09 Batch: WG1535169-2 WG1535169-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	103		111		30-130
2-Fluorobiphenyl	89		98		30-130
4-Terphenyl-d14	108		123		30-130

METALS

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-01
Client ID: LP-1
Sample Location: HYANNIS, MA
Date Collected: 08/02/21 11:25
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	14.8		mg/kg	3.16	--	1	08/13/21 23:15	08/16/21 18:05	EPA 3050B	97,6010D	SV

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-02
Client ID: LP-10
Sample Location: HYANNIS, MA
Date Collected: 08/02/21 11:35
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 22%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	240		mg/kg	8.82	--	1	08/13/21 23:15	08/16/21 18:10	EPA 3050B	97,6010D	SV

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-03
Client ID: LP-9
Sample Location: HYANNIS, MA
Date Collected: 08/02/21 11:45
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 6%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	108		mg/kg	30.4	--	1	08/13/21 23:15	08/16/21 18:14	EPA 3050B	97,6010D	SV

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-04
Client ID: LP-7
Sample Location: HYANNIS, MA
Date Collected: 08/02/21 11:55
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 16%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	371		mg/kg	12.6	--	1	08/13/21 23:15	08/16/21 18:19	EPA 3050B	97,6010D	SV

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-05
Client ID: LP-COMP 1
Sample Location: HYANNIS, MA
Date Collected: 08/02/21 11:25
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 31%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	107		mg/kg	6.39	--	1	08/19/21 12:19	08/19/21 14:00	EPA 3050B	97,6010D	SV

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-06
Client ID: LP-5
Sample Location: HYANNIS, MA
Date Collected: 08/02/21 12:10
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 11%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	241		mg/kg	18.5	--	1	08/13/21 23:15	08/16/21 18:41	EPA 3050B	97,6010D	SV

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-07
Client ID: LP-4
Sample Location: HYANNIS, MA
Date Collected: 08/02/21 12:20
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 9%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	184		mg/kg	22.5	--	1	08/13/21 23:15	08/16/21 18:46	EPA 3050B	97,6010D	SV

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-08
Client ID: LP-3
Sample Location: HYANNIS, MA
Date Collected: 08/02/21 12:32
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 12%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	198		mg/kg	16.2	--	1	08/13/21 23:15	08/16/21 17:47	EPA 3050B	97,6010D	SV

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-09
Client ID: LP-6
Sample Location: HYANNIS, MA
Date Collected: 08/02/21 12:43
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 6%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	119		mg/kg	33.4	--	1	08/13/21 23:15	08/16/21 17:56	EPA 3050B	97,6010D	SV

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2141856

Project Number: Not Specified **Report Date:** 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-10 Date Collected: 08/02/21 12:10

Client ID: LP-COMP 2 Date Received: 08/05/21

Sample Location: HYANNIS, MA Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 10%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	196		mg/kg	20.0	--	1	08/09/21 14:26	08/09/21 20:24	EPA 3050B	97,6010D	GD

Project Name: CAPE COD GATEWAY AIRPORT
Lab Number: L2141856
Project Number: Not Specified
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-15
Client ID: MD-COMP
Sample Location: HYANNIS, MA
Date Collected: 08/02/21 16:20
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 51%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	66.0		mg/kg	3.70	--	1	08/09/21 14:26	08/09/21 21:19	EPA 3050B	97,6010D	GD

Project Name: CAPE COD GATEWAY AIRPORT **Lab Number:** L2141856

Project Number: Not Specified **Report Date:** 08/19/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 10,15 Batch: WG1532917-1										
Lead, Total	ND		mg/kg	2.00	--	1	08/09/21 14:26	08/09/21 21:06	97,6010D	GD

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-04,06-09 Batch: WG1534984-1										
Lead, Total	ND		mg/kg	2.00	--	1	08/13/21 23:15	08/16/21 16:44	97,6010D	SV

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 05 Batch: WG1536945-1										
Lead, Total	ND		mg/kg	2.00	--	1	08/19/21 12:19	08/19/21 13:48	97,6010D	SV

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT

Project Number: Not Specified

Lab Number: L2141856

Report Date: 08/19/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 10,15 Batch: WG1532917-2 WG1532917-3 SRM Lot Number: D109-540								
Lead, Total	85		88		72-128	3		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01-04,06-09 Batch: WG1534984-2 WG1534984-3 SRM Lot Number: D109-540								
Lead, Total	92		95		72-128	3		30
MCP Total Metals - Mansfield Lab Associated sample(s): 05 Batch: WG1536945-2 WG1536945-3 SRM Lot Number: D109-540								
Lead, Total	105		92		72-128	13		30

INORGANICS
&
MISCELLANEOUS

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-01
Client ID: LP-1
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 11:25
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	62.7		%	0.100	NA	1	-	08/14/21 12:08	121,2540G	RI

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-02
Client ID: LP-10
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 11:35
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	22.2		%	0.100	NA	1	-	08/14/21 12:08	121,2540G	RI

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-03
Client ID: LP-9
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 11:45
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	6.38		%	0.100	NA	1	-	08/14/21 12:08	121,2540G	RI

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-04
Client ID: LP-7
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 11:55
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	15.6		%	0.100	NA	1	-	08/14/21 12:08	121,2540G	RI

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-05
Client ID: LP-COMP 1
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 11:25
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	30.8		%	0.100	NA	1	-	08/10/21 11:12	121,2540G	RI

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-06
Client ID: LP-5
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 12:10
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	10.7		%	0.100	NA	1	-	08/14/21 12:08	121,2540G	RI

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-07
Client ID: LP-4
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 12:20
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	8.58		%	0.100	NA	1	-	08/14/21 12:08	121,2540G	RI

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-08
Client ID: LP-3
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 12:32
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	12.3		%	0.100	NA	1	-	08/14/21 12:08	121,2540G	RI

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-09
Client ID: LP-6
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 12:43
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	5.98		%	0.100	NA	1	-	08/14/21 12:08	121,2540G	RI

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-10
Client ID: LP-COMP 2
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 12:10
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	9.62		%	0.100	NA	1	-	08/07/21 09:58	121,2540G	RI

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

SAMPLE RESULTS

Lab ID: L2141856-15
Client ID: MD-COMP
Sample Location: HYANNIS, MA

Date Collected: 08/02/21 16:20
Date Received: 08/05/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	51.4		%	0.100	NA	1	-	08/07/21 09:58	121,2540G	RI

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2141856-01A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		TS(7)
L2141856-01B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		MCP-PB-6010T-10(180)
L2141856-01C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		MCP-PAHSIM-10(14)
L2141856-01D	Glass 120ml unpreserved split	A	NA		4.2	Y	Absent		MCP-PAHSIM-10(14)
L2141856-02A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		TS(7)
L2141856-02B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		MCP-PB-6010T-10(180)
L2141856-02C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		MCP-PAHSIM-10(14)
L2141856-03A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		TS(7)
L2141856-03B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		MCP-PB-6010T-10(180)
L2141856-03C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		MCP-PAHSIM-10(14)
L2141856-04A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		TS(7)
L2141856-04B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		MCP-PB-6010T-10(180)
L2141856-04C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		MCP-PAHSIM-10(14)
L2141856-05A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		TS(7)
L2141856-05B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		MCP-PB-6010T-10(180)
L2141856-05C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		MCP-PAHSIM-10(14)
L2141856-06A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		TS(7)
L2141856-06B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		MCP-PB-6010T-10(180)
L2141856-06C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		MCP-PAHSIM-10(14)
L2141856-07A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		TS(7)
L2141856-07B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		MCP-PB-6010T-10(180)
L2141856-07C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		MCP-PAHSIM-10(14)
L2141856-08A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: CAPE COD GATEWAY AIRPORT
Project Number: Not Specified

Lab Number: L2141856
Report Date: 08/19/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2141856-08B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		MCP-PB-6010T-10(180)
L2141856-08C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		MCP-PAHSIM-10(14)
L2141856-09A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		TS(7)
L2141856-09B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		MCP-PB-6010T-10(180)
L2141856-09C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		MCP-PAHSIM-10(14)
L2141856-10A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		TS(7)
L2141856-10B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		MCP-PB-6010T-10(180)
L2141856-10C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		MCP-PAHSIM-10(14)
L2141856-11A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		HOLD-WETCHEM()
L2141856-11B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		HOLD-METAL(180),HOLD-8270(14)
L2141856-11C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		-
L2141856-12A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		HOLD-WETCHEM()
L2141856-12B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		HOLD-8270(14),HOLD-METAL(180)
L2141856-12C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		-
L2141856-13A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		HOLD-WETCHEM()
L2141856-13B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		HOLD-8270(14),HOLD-METAL(180)
L2141856-13C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		-
L2141856-14A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		HOLD-WETCHEM()
L2141856-14B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		HOLD-8270(14),HOLD-METAL(180)
L2141856-14C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		-
L2141856-15A	Plastic 2oz unpreserved for TS	A	NA		4.2	Y	Absent		TS(7)
L2141856-15B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.2	Y	Absent		MCP-PB-6010T-10(180)
L2141856-15C	Glass 120ml/4oz unpreserved	A	NA		4.2	Y	Absent		MCP-PAHSIM-10(14)

*Values in parentheses indicate holding time in days

Project Name:	CAPE COD GATEWAY AIRPORT	**Lab Number:**	L2141856
Project Number:	Not Specified	**Report Date:**	08/19/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	CAPE COD GATEWAY AIRPORT	**Lab Number:**	L2141856
Project Number:	Not Specified	**Report Date:**	08/19/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Report Format: Data Usability Report

Project Name:	CAPE COD GATEWAY AIRPORT	**Lab Number:**	L2141856
Project Number:	Not Specified	**Report Date:**	08/19/21

Data Qualifiers

the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

REFERENCES

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 8/5/21

ALPHA Job #: L2141856

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Project Information

Project Name: CAPE COD GATEWAY AIRPORT
Project Location: HYANNIS, MA
Project #: 21083
Project Manager: BRYAN MASSA
ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Client Information

Client: HORSLEY WITTEN GROUP
Address: 90 ROUTE 6A
SANDWICH, MA 02563
Phone: 508-833-6600
Email: jibanez@horsleywitten.com

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Additional Project Information:

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO: Filtration ☐ Field ☐ Lab to do; Preservation ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Lead	PAH SIM	Total % Solids	Sample Comments	TOTAL # BOTTLES
41856-01	LP-1	8/2/21	1125	Sediment	JI	X	X	X		3
-02	LP-10		1135							
-03	LP-9		1145							
-04	LP-7		1155							
-05	LP-COMP1		1125							
-06	LP-5		1210							
-07	LP-4		1220							
-08	LP-3		1232							
-09	LP-6		1243							
-10	LP-COMP2		1210							

	Lead	PAH SIM	Total % Solids
Container Type	2oz AG	4oz AG	2oz P
Preservative	A	A	A

Container Type: P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H = $Na_2S_2O_3$, I= Ascorbic Acid, J = NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	8/5/21 1015	[signature] MUTL AAL	8/5/21 1015
[signature]	8/5/21 1255	[signature]	8/5/21 1235

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

CHAIN OF CUSTODY

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Date Rec'd in Lab: 8/5/21

ALPHA Job #: L2141856

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Project Information

Project Name: CAPE COD GATEWAY AIRPORT
Project Location: HYANNIS, MA
Project #: 21083
Project Manager: BRYAN MASSA
ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Client Information

Client: HORSLEY WITTEN GROUP
Address: 90 ROUTE 6A
SANDWICH, MA 02360
Phone: 508-833-6600
Email: jibanez@horsleywitten.com

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Additional Project Information:

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO: Filtration ☐ Field ☐ Lab to do; Preservation ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Lead	PAH SIM	Total % Solid	Sample Comments	TOTAL # BOTTLES
41856-11	MD-1	8/2/21	1620	SEDIMENT	JI	X	X	X		3
-12	MD-2	↓	1642	↓	↓	↓	↓	↓		↓
-13	MD-3	↓	1657	↓	↓	↓	↓	↓		↓
-14	MD-4	↓	1710	↓	↓	↓	↓	↓		↓
-15	MD-comp	↓	1620	↓	↓	↓	↓	↓		↓

	Lead	PAH SIM	Total % Solid
Container Type	A	A	A
Preservative	A	A	A

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	8/5/21 1015	[signature] MUIR AAL	8/5/21 1015
[signature]	8/5/21 1225	[signature]	8/5/21 1225

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

CERTIFICATE OF ANALYSIS

Gary Hedman
Horsley & Witten
90 Route 6A
Sandwich, MA 02563

RE: BMA Risk (11024)
ESS Laboratory Work Order Number: 1102199

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102199

SAMPLE RECEIPT

The following samples were received on February 17, 2011 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has performed and reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for Metals and SVOA were analyzed for a subset of the required MCP list per the client's request.

Lab Number	SampleName	Matrix	Analysis
1102199-01	UG1 Outfall B and C	Soil	6010B, 7471B, 8270D
1102199-02	UG2	Soil	6010B, 7471B, 8270D
1102199-03	UG3	Soil	6010B, 7471B, 8270D
1102199-04	UG4	Soil	6010B, 7471B, 8270D
1102199-05	UG5	Soil	6010B, 7471B, 8270D
1102199-06	UG6	Soil	6010B, 7471B, 8270D
1102199-07	UG7	Soil	6010B, 7471B, 8270D
1102199-08	UG8	Soil	6010B, 7471B, 8270D
1102199-09	UG9	Soil	6010B, 7471B, 8270D
1102199-10	UG10	Soil	6010B, 7471B, 8270D
1102199-11	UG11 Outfall A	Soil	6010B, 7471B, 8270D
1102199-12	LP1 Outfall D	Soil	6010B, 7471B, 8270D
1102199-13	LP2	Soil	6010B, 7471B, 8270D
1102199-14	LP3	Soil	6010B, 7471B, 8270D
1102199-15	LP4	Soil	6010B, 7471B, 8270D
1102199-16	LP5	Soil	6010B, 7471B, 8270D
1102199-17	LP6	Soil	6010B, 7471B, 8270D
1102199-18	LP7	Soil	6010B, 7471B, 8270D
1102199-19	LP8	Soil	6010B, 7471B, 8270D
1102199-20	LP9	Soil	6010B, 7471B, 8270D

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102199

PROJECT NARRATIVE

3050B/6000/7000 Total Metals

CB11820-MS1 **Due to high target values, matrix spike compound(s) is masked (MT).**
Lead (38% @ 75-125%)

CB11830-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Mercury (137% @ 80-120%)

8270D Polynuclear Aromatic Hydrocarbons

CUB0109-CCV1 **Continuing Calibration recovery is above upper control limit (C+).**
Benzo(k)fluoranthene (124% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102199

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1102199-01 through 1102199-20**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

( ) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH CAM IV A	( ) 8081 Pesticides CAM V B	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 8270 SVOC CAM II B	( ) 7010 Metals CAM III C	( ) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) 8330 Explosives CAM VIII A	( ) TO-15 VOC CAM IX B
(X) 6010 Metals CAM III A	( ) 6020 Metals CAM III D	( ) 8082 PCB CAM V A	( ) 6860 Perchlorate CAM VIII B	( ) 9014 Total Cyanide/PAC CAM VI A	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	a. VPH, EPH, APH and TO-15 only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? ***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**	Yes (X) No ( )*
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (X)*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ Date: February 25, 2011

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG1 Outfall B and C
Date Sampled: 02/16/11 10:00
Percent Solids: 68

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-01
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (3.0)	6010B	20	1	SVD	02/22/11 17:36	2.47	100	CB11820
Barium	**11.3** (3.0)	6010B	1000	1	SVD	02/22/11 17:36	2.47	100	CB11820
Cadmium	ND (0.60)	6010B	2	1	SVD	02/22/11 17:36	2.47	100	CB11820
Chromium	**18.7** (1.2)	6010B	30	1	SVD	02/22/11 17:36	2.47	100	CB11820
Lead	**82.5** (6.0)	6010B	300	1	SVD	02/22/11 17:36	2.47	100	CB11820
Mercury	ND (0.029)	7471B	20	1	KJK	02/22/11 17:14	1	40	CB11826
Selenium	ND (6.0)	6010B	400	1	SVD	02/22/11 17:36	2.47	100	CB11820
Silver	ND (0.60)	6010B	100	1	SVD	02/22/11 17:36	2.47	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG1 Outfall B and C
Date Sampled: 02/16/11 10:00
Percent Solids: 68
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.483)	0.7	1	02/23/11 16:21	CUB0109	CB11821
Acenaphthene	ND (0.483)	4	1	02/23/11 16:21	CUB0109	CB11821
Acenaphthylene	ND (0.483)	1	1	02/23/11 16:21	CUB0109	CB11821
Anthracene	ND (0.483)	1000	1	02/23/11 16:21	CUB0109	CB11821
Benzo(a)anthracene	**1.16** (0.483)	7	1	02/23/11 16:21	CUB0109	CB11821
Benzo(a)pyrene	**1.06** (0.242)	2	1	02/23/11 16:21	CUB0109	CB11821
Benzo(b)fluoranthene	**1.33** (0.483)	7	1	02/23/11 16:21	CUB0109	CB11821
Benzo(g,h,i)perylene	**0.562** (0.483)	1000	1	02/23/11 16:21	CUB0109	CB11821
Benzo(k)fluoranthene	**1.37** (0.483)	70	1	02/23/11 16:21	CUB0109	CB11821
Chrysene	**1.56** (0.242)	70	1	02/23/11 16:21	CUB0109	CB11821
Dibenzo(a,h)Anthracene	**0.387** (0.242)	0.7	1	02/23/11 16:21	CUB0109	CB11821
Fluoranthene	**3.62** (0.483)	1000	1	02/23/11 16:21	CUB0109	CB11821
Fluorene	ND (0.483)	1000	1	02/23/11 16:21	CUB0109	CB11821
Indeno(1,2,3-cd)Pyrene	**0.567** (0.483)	7	1	02/23/11 16:21	CUB0109	CB11821
Naphthalene	ND (0.483)	4	1	02/23/11 16:21	CUB0109	CB11821
Phenanthrene	**2.37** (0.483)	10	1	02/23/11 16:21	CUB0109	CB11821
Pyrene	**2.91** (0.483)	1000	1	02/23/11 16:21	CUB0109	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*62 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*64 %*		*30-130*
Surrogate: Nitrobenzene-d5	*66 %*		*30-130*
Surrogate: p-Terphenyl-d14	*88 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG2
Date Sampled: 02/16/11 10:10
Percent Solids: 66

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-02
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (2.4)	6010B	20	1	SVD	02/22/11 18:06	3.18	100	CB11820
Barium	**7.9** (2.4)	6010B	1000	1	SVD	02/22/11 18:06	3.18	100	CB11820
Cadmium	ND (0.48)	6010B	2	1	SVD	02/22/11 18:06	3.18	100	CB11820
Chromium	**6.8** (1.0)	6010B	30	1	SVD	02/22/11 18:06	3.18	100	CB11820
Lead	**43.1** (4.8)	6010B	300	1	SVD	02/22/11 18:06	3.18	100	CB11820
Mercury	ND (0.030)	7471B	20	1	KJK	02/22/11 17:16	1	40	CB11826
Selenium	ND (4.8)	6010B	400	1	SVD	02/22/11 18:06	3.18	100	CB11820
Silver	ND (0.48)	6010B	100	1	SVD	02/22/11 18:06	3.18	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG2
Date Sampled: 02/16/11 10:10
Percent Solids: 66
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.476)	0.7	1	02/20/11 21:19	CUB0098	CB11821
Acenaphthene	ND (0.476)	4	1	02/20/11 21:19	CUB0098	CB11821
Acenaphthylene	ND (0.476)	1	1	02/20/11 21:19	CUB0098	CB11821
Anthracene	ND (0.476)	1000	1	02/20/11 21:19	CUB0098	CB11821
Benzo(a)anthracene	ND (0.476)	7	1	02/20/11 21:19	CUB0098	CB11821
Benzo(a)pyrene	ND (0.239)	2	1	02/20/11 21:19	CUB0098	CB11821
Benzo(b)fluoranthene	ND (0.476)	7	1	02/20/11 21:19	CUB0098	CB11821
Benzo(g,h,i)perylene	ND (0.476)	1000	1	02/20/11 21:19	CUB0098	CB11821
Benzo(k)fluoranthene	ND (0.476)	70	1	02/20/11 21:19	CUB0098	CB11821
Chrysene	ND (0.239)	70	1	02/20/11 21:19	CUB0098	CB11821
Dibenzo(a,h)Anthracene	ND (0.239)	0.7	1	02/20/11 21:19	CUB0098	CB11821
Fluoranthene	ND (0.476)	1000	1	02/20/11 21:19	CUB0098	CB11821
Fluorene	ND (0.476)	1000	1	02/20/11 21:19	CUB0098	CB11821
Indeno(1,2,3-cd)Pyrene	ND (0.476)	7	1	02/20/11 21:19	CUB0098	CB11821
Naphthalene	ND (0.476)	4	1	02/20/11 21:19	CUB0098	CB11821
Phenanthrene	ND (0.476)	10	1	02/20/11 21:19	CUB0098	CB11821
Pyrene	ND (0.476)	1000	1	02/20/11 21:19	CUB0098	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*72 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*70 %*		*30-130*
Surrogate: Nitrobenzene-d5	*70 %*		*30-130*
Surrogate: p-Terphenyl-d14	*102 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG3
Date Sampled: 02/16/11 10:20
Percent Solids: 5

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-03
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (42.3)	6010B	20	1	SVD	02/22/11 18:10	2.36	100	CB11820
Barium	**61.7** (42.3)	6010B	1000	1	SVD	02/22/11 18:10	2.36	100	CB11820
Cadmium	ND (8.52)	6010B	2	1	SVD	02/22/11 18:10	2.36	100	CB11820
Chromium	ND (16.9)	6010B	30	1	SVD	02/22/11 18:10	2.36	100	CB11820
Lead	**152** (84.8)	6010B	300	1	SVD	02/22/11 18:10	2.36	100	CB11820
Mercury	ND (0.600)	7471B	20	1	KJK	02/22/11 17:19	0.66	40	CB11826
Selenium	ND (84.8)	6010B	400	1	SVD	02/22/11 18:10	2.36	100	CB11820
Silver	ND (8.52)	6010B	100	1	SVD	02/22/11 18:10	2.36	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG3
Date Sampled: 02/16/11 10:20
Percent Solids: 5
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (6.28)	0.7	1	02/20/11 21:53	CUB0098	CB11821
Acenaphthene	ND (6.28)	4	1	02/20/11 21:53	CUB0098	CB11821
Acenaphthylene	ND (6.28)	1	1	02/20/11 21:53	CUB0098	CB11821
Anthracene	ND (6.28)	1000	1	02/20/11 21:53	CUB0098	CB11821
Benzo(a)anthracene	ND (6.28)	7	1	02/20/11 21:53	CUB0098	CB11821
Benzo(a)pyrene	ND (3.15)	2	1	02/20/11 21:53	CUB0098	CB11821
Benzo(b)fluoranthene	ND (6.28)	7	1	02/20/11 21:53	CUB0098	CB11821
Benzo(g,h,i)perylene	ND (6.28)	1000	1	02/20/11 21:53	CUB0098	CB11821
Benzo(k)fluoranthene	ND (6.28)	70	1	02/20/11 21:53	CUB0098	CB11821
Chrysene	ND (3.15)	70	1	02/20/11 21:53	CUB0098	CB11821
Dibenzo(a,h)Anthracene	ND (3.15)	0.7	1	02/20/11 21:53	CUB0098	CB11821
Fluoranthene	ND (6.28)	1000	1	02/20/11 21:53	CUB0098	CB11821
Fluorene	ND (6.28)	1000	1	02/20/11 21:53	CUB0098	CB11821
Indeno(1,2,3-cd)Pyrene	ND (6.28)	7	1	02/20/11 21:53	CUB0098	CB11821
Naphthalene	ND (6.28)	4	1	02/20/11 21:53	CUB0098	CB11821
Phenanthrene	ND (6.28)	10	1	02/20/11 21:53	CUB0098	CB11821
Pyrene	ND (6.28)	1000	1	02/20/11 21:53	CUB0098	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*70 %*		*30-130*
Surrogate: Nitrobenzene-d5	*74 %*		*30-130*
Surrogate: p-Terphenyl-d14	*90 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG4
Date Sampled: 02/16/11 10:30
Percent Solids: 8

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-04
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (30.0)	6010B	20	1	SVD	02/22/11 18:14	2.08	100	CB11820
Barium	**60.3** (30.0)	6010B	1000	1	SVD	02/22/11 18:14	2.08	100	CB11820
Cadmium	ND (6.04)	6010B	2	1	SVD	02/22/11 18:14	2.08	100	CB11820
Chromium	ND (12.0)	6010B	30	1	SVD	02/22/11 18:14	2.08	100	CB11820
Lead	ND (60.1)	6010B	300	1	SVD	02/22/11 18:14	2.08	100	CB11820
Mercury	ND (0.364)	7471B	20	1	KJK	02/22/11 17:22	0.68	40	CB11826
Selenium	ND (60.1)	6010B	400	1	SVD	02/22/11 18:14	2.08	100	CB11820
Silver	ND (6.04)	6010B	100	1	SVD	02/22/11 18:14	2.08	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG4
Date Sampled: 02/16/11 10:30
Percent Solids: 8
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

MA - S1GW1

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (3.93)	0.7	1	02/20/11 22:26	CUB0098	CB11821
Acenaphthene	ND (3.93)	4	1	02/20/11 22:26	CUB0098	CB11821
Acenaphthylene	ND (3.93)	1	1	02/20/11 22:26	CUB0098	CB11821
Anthracene	ND (3.93)	1000	1	02/20/11 22:26	CUB0098	CB11821
Benzo(a)anthracene	ND (3.93)	7	1	02/20/11 22:26	CUB0098	CB11821
Benzo(a)pyrene	ND (1.97)	2	1	02/20/11 22:26	CUB0098	CB11821
Benzo(b)fluoranthene	ND (3.93)	7	1	02/20/11 22:26	CUB0098	CB11821
Benzo(g,h,i)perylene	ND (3.93)	1000	1	02/20/11 22:26	CUB0098	CB11821
Benzo(k)fluoranthene	ND (3.93)	70	1	02/20/11 22:26	CUB0098	CB11821
Chrysene	ND (1.97)	70	1	02/20/11 22:26	CUB0098	CB11821
Dibenzo(a,h)Anthracene	ND (1.97)	0.7	1	02/20/11 22:26	CUB0098	CB11821
Fluoranthene	ND (3.93)	1000	1	02/20/11 22:26	CUB0098	CB11821
Fluorene	ND (3.93)	1000	1	02/20/11 22:26	CUB0098	CB11821
Indeno(1,2,3-cd)Pyrene	ND (3.93)	7	1	02/20/11 22:26	CUB0098	CB11821
Naphthalene	ND (3.93)	4	1	02/20/11 22:26	CUB0098	CB11821
Phenanthrene	ND (3.93)	10	1	02/20/11 22:26	CUB0098	CB11821
Pyrene	ND (3.93)	1000	1	02/20/11 22:26	CUB0098	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*85 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*82 %*		*30-130*
Surrogate: Nitrobenzene-d5	*83 %*		*30-130*
Surrogate: p-Terphenyl-d14	*101 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG5
Date Sampled: 02/16/11 10:40
Percent Solids: 6

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-05
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (36.2)	6010B	20	1	SVD	02/22/11 18:19	2.3	100	CB11820
Barium	**78.5** (36.2)	6010B	1000	1	SVD	02/22/11 18:19	2.3	100	CB11820
Cadmium	ND (7.28)	6010B	2	1	SVD	02/22/11 18:19	2.3	100	CB11820
Chromium	ND (14.5)	6010B	30	1	SVD	02/22/11 18:19	2.3	100	CB11820
Lead	**78.4** (72.5)	6010B	300	1	SVD	02/22/11 18:19	2.3	100	CB11820
Mercury	ND (0.524)	7471B	20	1	KJK	02/22/11 17:25	0.63	40	CB11826
Selenium	ND (72.5)	6010B	400	1	SVD	02/22/11 18:19	2.3	100	CB11820
Silver	ND (7.28)	6010B	100	1	SVD	02/22/11 18:19	2.3	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG5
Date Sampled: 02/16/11 10:40
Percent Solids: 6
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (5.55)	0.7	1	02/20/11 23:00	CUB0098	CB11821
Acenaphthene	ND (5.55)	4	1	02/20/11 23:00	CUB0098	CB11821
Acenaphthylene	ND (5.55)	1	1	02/20/11 23:00	CUB0098	CB11821
Anthracene	ND (5.55)	1000	1	02/20/11 23:00	CUB0098	CB11821
Benzo(a)anthracene	ND (5.55)	7	1	02/20/11 23:00	CUB0098	CB11821
Benzo(a)pyrene	ND (2.78)	2	1	02/20/11 23:00	CUB0098	CB11821
Benzo(b)fluoranthene	ND (5.55)	7	1	02/20/11 23:00	CUB0098	CB11821
Benzo(g,h,i)perylene	ND (5.55)	1000	1	02/20/11 23:00	CUB0098	CB11821
Benzo(k)fluoranthene	ND (5.55)	70	1	02/20/11 23:00	CUB0098	CB11821
Chrysene	ND (2.78)	70	1	02/20/11 23:00	CUB0098	CB11821
Dibenzo(a,h)Anthracene	ND (2.78)	0.7	1	02/20/11 23:00	CUB0098	CB11821
Fluoranthene	ND (5.55)	1000	1	02/20/11 23:00	CUB0098	CB11821
Fluorene	ND (5.55)	1000	1	02/20/11 23:00	CUB0098	CB11821
Indeno(1,2,3-cd)Pyrene	ND (5.55)	7	1	02/20/11 23:00	CUB0098	CB11821
Naphthalene	ND (5.55)	4	1	02/20/11 23:00	CUB0098	CB11821
Phenanthrene	ND (5.55)	10	1	02/20/11 23:00	CUB0098	CB11821
Pyrene	ND (5.55)	1000	1	02/20/11 23:00	CUB0098	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*68 %*		*30-130*
Surrogate: Nitrobenzene-d5	*80 %*		*30-130*
Surrogate: p-Terphenyl-d14	*88 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG6
Date Sampled: 02/16/11 10:50
Percent Solids: 9

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-06
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (25.1)	6010B	20	1	SVD	02/22/11 18:23	2.21	100	CB11820
Barium	**76.6** (25.1)	6010B	1000	1	SVD	02/22/11 18:23	2.21	100	CB11820
Cadmium	ND (5.05)	6010B	2	1	SVD	02/22/11 18:23	2.21	100	CB11820
Chromium	ND (10.0)	6010B	30	1	SVD	02/22/11 18:23	2.21	100	CB11820
Lead	ND (50.3)	6010B	300	1	SVD	02/22/11 18:23	2.21	100	CB11820
Mercury	ND (0.319)	7471B	20	1	KJK	02/22/11 17:27	0.69	40	CB11826
Selenium	ND (50.3)	6010B	400	1	SVD	02/22/11 18:23	2.21	100	CB11820
Silver	ND (5.05)	6010B	100	1	SVD	02/22/11 18:23	2.21	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG6
Date Sampled: 02/16/11 10:50
Percent Solids: 9
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (3.58)	0.7	1	02/20/11 23:34	CUB0098	CB11821
Acenaphthene	ND (3.58)	4	1	02/20/11 23:34	CUB0098	CB11821
Acenaphthylene	ND (3.58)	1	1	02/20/11 23:34	CUB0098	CB11821
Anthracene	ND (3.58)	1000	1	02/20/11 23:34	CUB0098	CB11821
Benzo(a)anthracene	ND (3.58)	7	1	02/20/11 23:34	CUB0098	CB11821
Benzo(a)pyrene	ND (1.80)	2	1	02/20/11 23:34	CUB0098	CB11821
Benzo(b)fluoranthene	ND (3.58)	7	1	02/20/11 23:34	CUB0098	CB11821
Benzo(g,h,i)perylene	ND (3.58)	1000	1	02/20/11 23:34	CUB0098	CB11821
Benzo(k)fluoranthene	ND (3.58)	70	1	02/20/11 23:34	CUB0098	CB11821
Chrysene	ND (1.80)	70	1	02/20/11 23:34	CUB0098	CB11821
Dibenzo(a,h)Anthracene	ND (1.80)	0.7	1	02/20/11 23:34	CUB0098	CB11821
Fluoranthene	ND (3.58)	1000	1	02/20/11 23:34	CUB0098	CB11821
Fluorene	ND (3.58)	1000	1	02/20/11 23:34	CUB0098	CB11821
Indeno(1,2,3-cd)Pyrene	ND (3.58)	7	1	02/20/11 23:34	CUB0098	CB11821
Naphthalene	ND (3.58)	4	1	02/20/11 23:34	CUB0098	CB11821
Phenanthrene	ND (3.58)	10	1	02/20/11 23:34	CUB0098	CB11821
Pyrene	ND (3.58)	1000	1	02/20/11 23:34	CUB0098	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*73 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*71 %*		*30-130*
Surrogate: Nitrobenzene-d5	*73 %*		*30-130*
Surrogate: p-Terphenyl-d14	*93 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG7
Date Sampled: 02/16/11 11:00
Percent Solids: 8

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-07
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (27.9)	6010B	20	1	SVD	02/22/11 18:27	2.24	100	CB11820
Barium	**60.9** (27.9)	6010B	1000	1	SVD	02/22/11 18:27	2.24	100	CB11820
Cadmium	ND (5.61)	6010B	2	1	SVD	02/22/11 18:27	2.24	100	CB11820
Chromium	ND (11.1)	6010B	30	1	SVD	02/22/11 18:27	2.24	100	CB11820
Lead	ND (55.8)	6010B	300	1	SVD	02/22/11 18:27	2.24	100	CB11820
Mercury	ND (0.354)	7471B	20	1	KJK	02/22/11 17:30	0.7	40	CB11826
Selenium	ND (55.8)	6010B	400	1	SVD	02/22/11 18:27	2.24	100	CB11820
Silver	ND (5.61)	6010B	100	1	SVD	02/22/11 18:27	2.24	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG7
Date Sampled: 02/16/11 11:00
Percent Solids: 8
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

MA - S1GW1

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (4.16)	0.7	1	02/21/11 0:08	CUB0098	CB11821
Acenaphthene	ND (4.16)	4	1	02/21/11 0:08	CUB0098	CB11821
Acenaphthylene	ND (4.16)	1	1	02/21/11 0:08	CUB0098	CB11821
Anthracene	ND (4.16)	1000	1	02/21/11 0:08	CUB0098	CB11821
Benzo(a)anthracene	ND (4.16)	7	1	02/21/11 0:08	CUB0098	CB11821
Benzo(a)pyrene	ND (2.09)	2	1	02/21/11 0:08	CUB0098	CB11821
Benzo(b)fluoranthene	ND (4.16)	7	1	02/21/11 0:08	CUB0098	CB11821
Benzo(g,h,i)perylene	ND (4.16)	1000	1	02/21/11 0:08	CUB0098	CB11821
Benzo(k)fluoranthene	ND (4.16)	70	1	02/21/11 0:08	CUB0098	CB11821
Chrysene	ND (2.09)	70	1	02/21/11 0:08	CUB0098	CB11821
Dibenzo(a,h)Anthracene	ND (2.09)	0.7	1	02/21/11 0:08	CUB0098	CB11821
Fluoranthene	ND (4.16)	1000	1	02/21/11 0:08	CUB0098	CB11821
Fluorene	ND (4.16)	1000	1	02/21/11 0:08	CUB0098	CB11821
Indeno(1,2,3-cd)Pyrene	ND (4.16)	7	1	02/21/11 0:08	CUB0098	CB11821
Naphthalene	ND (4.16)	4	1	02/21/11 0:08	CUB0098	CB11821
Phenanthrene	ND (4.16)	10	1	02/21/11 0:08	CUB0098	CB11821
Pyrene	ND (4.16)	1000	1	02/21/11 0:08	CUB0098	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*76 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*72 %*		*30-130*
Surrogate: Nitrobenzene-d5	*71 %*		*30-130*
Surrogate: p-Terphenyl-d14	*92 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG8
Date Sampled: 02/16/11 11:10
Percent Solids: 8

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-08
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (26.8)	6010B	20	1	SVD	02/22/11 18:31	2.33	100	CB11820
Barium	**57.3** (26.8)	6010B	1000	1	SVD	02/22/11 18:31	2.33	100	CB11820
Cadmium	ND (5.39)	6010B	2	1	SVD	02/22/11 18:31	2.33	100	CB11820
Chromium	ND (10.7)	6010B	30	1	SVD	02/22/11 18:31	2.33	100	CB11820
Lead	ND (53.7)	6010B	300	1	SVD	02/22/11 18:31	2.33	100	CB11820
Mercury	ND (0.354)	7471B	20	1	KJK	02/22/11 17:33	0.7	40	CB11826
Selenium	ND (53.7)	6010B	400	1	SVD	02/22/11 18:31	2.33	100	CB11820
Silver	ND (5.39)	6010B	100	1	SVD	02/22/11 18:31	2.33	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG8
Date Sampled: 02/16/11 11:10
Percent Solids: 8
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (3.93)	0.7	1	02/21/11 0:41	CUB0098	CB11821
Acenaphthene	ND (3.93)	4	1	02/21/11 0:41	CUB0098	CB11821
Acenaphthylene	ND (3.93)	1	1	02/21/11 0:41	CUB0098	CB11821
Anthracene	ND (3.93)	1000	1	02/21/11 0:41	CUB0098	CB11821
Benzo(a)anthracene	ND (3.93)	7	1	02/21/11 0:41	CUB0098	CB11821
Benzo(a)pyrene	ND (1.97)	2	1	02/21/11 0:41	CUB0098	CB11821
Benzo(b)fluoranthene	ND (3.93)	7	1	02/21/11 0:41	CUB0098	CB11821
Benzo(g,h,i)perylene	ND (3.93)	1000	1	02/21/11 0:41	CUB0098	CB11821
Benzo(k)fluoranthene	ND (3.93)	70	1	02/21/11 0:41	CUB0098	CB11821
Chrysene	ND (1.97)	70	1	02/21/11 0:41	CUB0098	CB11821
Dibenzo(a,h)Anthracene	ND (1.97)	0.7	1	02/21/11 0:41	CUB0098	CB11821
Fluoranthene	ND (3.93)	1000	1	02/21/11 0:41	CUB0098	CB11821
Fluorene	ND (3.93)	1000	1	02/21/11 0:41	CUB0098	CB11821
Indeno(1,2,3-cd)Pyrene	ND (3.93)	7	1	02/21/11 0:41	CUB0098	CB11821
Naphthalene	ND (3.93)	4	1	02/21/11 0:41	CUB0098	CB11821
Phenanthrene	ND (3.93)	10	1	02/21/11 0:41	CUB0098	CB11821
Pyrene	ND (3.93)	1000	1	02/21/11 0:41	CUB0098	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*76 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*74 %*		*30-130*
Surrogate: Nitrobenzene-d5	*79 %*		*30-130*
Surrogate: p-Terphenyl-d14	*96 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG9
Date Sampled: 02/16/11 11:20
Percent Solids: 7

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-09
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (32.6)	6010B	20	1	SVD	02/22/11 18:35	2.19	100	CB11820
Barium	**80.6** (32.6)	6010B	1000	1	SVD	02/22/11 18:35	2.19	100	CB11820
Cadmium	ND (6.56)	6010B	2	1	SVD	02/22/11 18:35	2.19	100	CB11820
Chromium	ND (13.0)	6010B	30	1	SVD	02/22/11 18:35	2.19	100	CB11820
Lead	**65.3** (65.3)	6010B	300	1	SVD	02/22/11 18:35	2.19	100	CB11820
Mercury	ND (0.449)	7471B	20	1	KJK	02/22/11 17:54	0.63	40	CB11826
Selenium	ND (65.3)	6010B	400	1	SVD	02/22/11 18:35	2.19	100	CB11820
Silver	ND (6.56)	6010B	100	1	SVD	02/22/11 18:35	2.19	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG9
Date Sampled: 02/16/11 11:20
Percent Solids: 7
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (4.69)	0.7	1	02/23/11 14:41	CUB0109	CB11821
Acenaphthene	ND (4.69)	4	1	02/23/11 14:41	CUB0109	CB11821
Acenaphthylene	ND (4.69)	1	1	02/23/11 14:41	CUB0109	CB11821
Anthracene	ND (4.69)	1000	1	02/23/11 14:41	CUB0109	CB11821
Benzo(a)anthracene	ND (4.69)	7	1	02/23/11 14:41	CUB0109	CB11821
Benzo(a)pyrene	ND (2.35)	2	1	02/23/11 14:41	CUB0109	CB11821
Benzo(b)fluoranthene	ND (4.69)	7	1	02/23/11 14:41	CUB0109	CB11821
Benzo(g,h,i)perylene	ND (4.69)	1000	1	02/23/11 14:41	CUB0109	CB11821
Benzo(k)fluoranthene	ND (4.69)	70	1	02/23/11 14:41	CUB0109	CB11821
Chrysene	ND (2.35)	70	1	02/23/11 14:41	CUB0109	CB11821
Dibenzo(a,h)Anthracene	ND (2.35)	0.7	1	02/23/11 14:41	CUB0109	CB11821
Fluoranthene	ND (4.69)	1000	1	02/23/11 14:41	CUB0109	CB11821
Fluorene	ND (4.69)	1000	1	02/23/11 14:41	CUB0109	CB11821
Indeno(1,2,3-cd)Pyrene	ND (4.69)	7	1	02/23/11 14:41	CUB0109	CB11821
Naphthalene	ND (4.69)	4	1	02/23/11 14:41	CUB0109	CB11821
Phenanthrene	ND (4.69)	10	1	02/23/11 14:41	CUB0109	CB11821
Pyrene	ND (4.69)	1000	1	02/23/11 14:41	CUB0109	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*73 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*72 %*		*30-130*
Surrogate: Nitrobenzene-d5	*77 %*		*30-130*
Surrogate: p-Terphenyl-d14	*82 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG10
Date Sampled: 02/16/11 11:30
Percent Solids: 8

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-10
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (28.3)	6010B	20	1	SVD	02/22/11 18:40	2.21	100	CB11820
Barium	**51.3** (28.3)	6010B	1000	1	SVD	02/22/11 18:40	2.21	100	CB11820
Cadmium	ND (5.68)	6010B	2	1	SVD	02/22/11 18:40	2.21	100	CB11820
Chromium	ND (11.3)	6010B	30	1	SVD	02/22/11 18:40	2.21	100	CB11820
Lead	ND (56.6)	6010B	300	1	SVD	02/22/11 18:40	2.21	100	CB11820
Mercury	ND (0.359)	7471B	20	1	KJK	02/22/11 17:57	0.69	40	CB11826
Selenium	ND (56.6)	6010B	400	1	SVD	02/22/11 18:40	2.21	100	CB11820
Silver	ND (5.68)	6010B	100	1	SVD	02/22/11 18:40	2.21	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG10
Date Sampled: 02/16/11 11:30
Percent Solids: 8
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

MA - S1GW1

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (3.93)	0.7	1	02/23/11 15:14	CUB0109	CB11821
Acenaphthene	ND (3.93)	4	1	02/23/11 15:14	CUB0109	CB11821
Acenaphthylene	ND (3.93)	1	1	02/23/11 15:14	CUB0109	CB11821
Anthracene	ND (3.93)	1000	1	02/23/11 15:14	CUB0109	CB11821
Benzo(a)anthracene	ND (3.93)	7	1	02/23/11 15:14	CUB0109	CB11821
Benzo(a)pyrene	ND (1.97)	2	1	02/23/11 15:14	CUB0109	CB11821
Benzo(b)fluoranthene	ND (3.93)	7	1	02/23/11 15:14	CUB0109	CB11821
Benzo(g,h,i)perylene	ND (3.93)	1000	1	02/23/11 15:14	CUB0109	CB11821
Benzo(k)fluoranthene	ND (3.93)	70	1	02/23/11 15:14	CUB0109	CB11821
Chrysene	ND (1.97)	70	1	02/23/11 15:14	CUB0109	CB11821
Dibenzo(a,h)Anthracene	ND (1.97)	0.7	1	02/23/11 15:14	CUB0109	CB11821
Fluoranthene	ND (3.93)	1000	1	02/23/11 15:14	CUB0109	CB11821
Fluorene	ND (3.93)	1000	1	02/23/11 15:14	CUB0109	CB11821
Indeno(1,2,3-cd)Pyrene	ND (3.93)	7	1	02/23/11 15:14	CUB0109	CB11821
Naphthalene	ND (3.93)	4	1	02/23/11 15:14	CUB0109	CB11821
Phenanthrene	ND (3.93)	10	1	02/23/11 15:14	CUB0109	CB11821
Pyrene	ND (3.93)	1000	1	02/23/11 15:14	CUB0109	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*70 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*76 %*		*30-130*
Surrogate: Nitrobenzene-d5	*76 %*		*30-130*
Surrogate: p-Terphenyl-d14	*87 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG11 Outfall A
Date Sampled: 02/16/11 11:40
Percent Solids: 9

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-11
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (22.4)	6010B	20	1	SVD	02/22/11 18:52	2.48	100	CB11820
Barium	**61.3** (22.4)	6010B	1000	1	SVD	02/22/11 18:52	2.48	100	CB11820
Cadmium	ND (4.50)	6010B	2	1	SVD	02/22/11 18:52	2.48	100	CB11820
Chromium	ND (8.9)	6010B	30	1	SVD	02/22/11 18:52	2.48	100	CB11820
Lead	ND (44.8)	6010B	300	1	SVD	02/22/11 18:52	2.48	100	CB11820
Mercury	ND (0.361)	7471B	20	1	KJK	02/22/11 17:59	0.61	40	CB11826
Selenium	ND (44.8)	6010B	400	1	SVD	02/22/11 18:52	2.48	100	CB11820
Silver	ND (4.50)	6010B	100	1	SVD	02/22/11 18:52	2.48	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: UG11 Outfall A
Date Sampled: 02/16/11 11:40
Percent Solids: 9
Initial Volume: 15.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (3.60)	0.7	1	02/22/11 20:45	CUB0103	CB11821
Acenaphthene	ND (3.60)	4	1	02/22/11 20:45	CUB0103	CB11821
Acenaphthylene	ND (3.60)	1	1	02/22/11 20:45	CUB0103	CB11821
Anthracene	ND (3.60)	1000	1	02/22/11 20:45	CUB0103	CB11821
Benzo(a)anthracene	ND (3.60)	7	1	02/22/11 20:45	CUB0103	CB11821
Benzo(a)pyrene	ND (1.81)	2	1	02/22/11 20:45	CUB0103	CB11821
Benzo(b)fluoranthene	ND (3.60)	7	1	02/22/11 20:45	CUB0103	CB11821
Benzo(g,h,i)perylene	ND (3.60)	1000	1	02/22/11 20:45	CUB0103	CB11821
Benzo(k)fluoranthene	ND (3.60)	70	1	02/22/11 20:45	CUB0103	CB11821
Chrysene	ND (1.81)	70	1	02/22/11 20:45	CUB0103	CB11821
Dibenzo(a,h)Anthracene	ND (1.81)	0.7	1	02/22/11 20:45	CUB0103	CB11821
Fluoranthene	ND (3.60)	1000	1	02/22/11 20:45	CUB0103	CB11821
Fluorene	ND (3.60)	1000	1	02/22/11 20:45	CUB0103	CB11821
Indeno(1,2,3-cd)Pyrene	ND (3.60)	7	1	02/22/11 20:45	CUB0103	CB11821
Naphthalene	ND (3.60)	4	1	02/22/11 20:45	CUB0103	CB11821
Phenanthrene	ND (3.60)	10	1	02/22/11 20:45	CUB0103	CB11821
Pyrene	ND (3.60)	1000	1	02/22/11 20:45	CUB0103	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*78 %*		*30-130*
Surrogate: Nitrobenzene-d5	*84 %*		*30-130*
Surrogate: p-Terphenyl-d14	*95 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP1 Outfall D
Date Sampled: 02/16/11 12:30
Percent Solids: 39

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-12
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	**6.1** (6.1)	6010B	20	1	SVD	02/22/11 19:13	2.11	100	CB11820
Barium	**55.9** (6.1)	6010B	1000	1	SVD	02/22/11 19:13	2.11	100	CB11820
Cadmium	**4.13** (1.22)	6010B	2	1	SVD	02/22/11 19:13	2.11	100	CB11820
Chromium	**39.6** (2.4)	6010B	30	1	SVD	02/22/11 19:13	2.11	100	CB11820
Lead	**325** (12.2)	6010B	300	1	SVD	02/22/11 19:13	2.11	100	CB11820
Mercury	**0.180** (0.085)	7471B	20	1	KJK	02/22/11 18:02	0.6	40	CB11826
Selenium	ND (12.2)	6010B	400	1	SVD	02/22/11 19:13	2.11	100	CB11820
Silver	ND (1.22)	6010B	100	1	SVD	02/22/11 19:13	2.11	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP1 Outfall D
Date Sampled: 02/16/11 12:30
Percent Solids: 39
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-12
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

MA - S1GW1

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.806)	0.7	1	02/23/11 16:54	CUB0109	CB11821
Acenaphthene	ND (0.806)	4	1	02/23/11 16:54	CUB0109	CB11821
Acenaphthylene	ND (0.806)	1	1	02/23/11 16:54	CUB0109	CB11821
Anthracene	ND (0.806)	1000	1	02/23/11 16:54	CUB0109	CB11821
Benzo(a)anthracene	ND (0.806)	7	1	02/23/11 16:54	CUB0109	CB11821
Benzo(a)pyrene	ND (0.404)	2	1	02/23/11 16:54	CUB0109	CB11821
Benzo(b)fluoranthene	ND (0.806)	7	1	02/23/11 16:54	CUB0109	CB11821
Benzo(g,h,i)perylene	ND (0.806)	1000	1	02/23/11 16:54	CUB0109	CB11821
Benzo(k)fluoranthene	ND (0.806)	70	1	02/23/11 16:54	CUB0109	CB11821
Chrysene	ND (0.404)	70	1	02/23/11 16:54	CUB0109	CB11821
Dibenzo(a,h)Anthracene	ND (0.404)	0.7	1	02/23/11 16:54	CUB0109	CB11821
Fluoranthene	ND (0.806)	1000	1	02/23/11 16:54	CUB0109	CB11821
Fluorene	ND (0.806)	1000	1	02/23/11 16:54	CUB0109	CB11821
Indeno(1,2,3-cd)Pyrene	ND (0.806)	7	1	02/23/11 16:54	CUB0109	CB11821
Naphthalene	ND (0.806)	4	1	02/23/11 16:54	CUB0109	CB11821
Phenanthrene	ND (0.806)	10	1	02/23/11 16:54	CUB0109	CB11821
Pyrene	ND (0.806)	1000	1	02/23/11 16:54	CUB0109	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*63 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*68 %*		*30-130*
Surrogate: Nitrobenzene-d5	*69 %*		*30-130*
Surrogate: p-Terphenyl-d14	*90 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP2
Date Sampled: 02/16/11 12:40
Percent Solids: 11

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-13
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (20.0)	6010B	20	1	SVD	02/22/11 19:17	2.27	100	CB11820
Barium	**50.8** (20.0)	6010B	1000	1	SVD	02/22/11 19:17	2.27	100	CB11820
Cadmium	ND (4.02)	6010B	2	1	SVD	02/22/11 19:17	2.27	100	CB11820
Chromium	**11.8** (8.0)	6010B	30	1	SVD	02/22/11 19:17	2.27	100	CB11820
Lead	**95.6** (40.1)	6010B	300	1	SVD	02/22/11 19:17	2.27	100	CB11820
Mercury	ND (0.295)	7471B	20	1	KJK	02/22/11 18:05	0.61	40	CB11826
Selenium	ND (40.1)	6010B	400	1	SVD	02/22/11 19:17	2.27	100	CB11820
Silver	ND (4.02)	6010B	100	1	SVD	02/22/11 19:17	2.27	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP2
Date Sampled: 02/16/11 12:40
Percent Solids: 11
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-13
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (2.99)	0.7	1	02/22/11 21:19	CUB0103	CB11821
Acenaphthene	ND (2.99)	4	1	02/22/11 21:19	CUB0103	CB11821
Acenaphthylene	ND (2.99)	1	1	02/22/11 21:19	CUB0103	CB11821
Anthracene	ND (2.99)	1000	1	02/22/11 21:19	CUB0103	CB11821
Benzo(a)anthracene	ND (2.99)	7	1	02/22/11 21:19	CUB0103	CB11821
Benzo(a)pyrene	ND (1.50)	2	1	02/22/11 21:19	CUB0103	CB11821
Benzo(b)fluoranthene	ND (2.99)	7	1	02/22/11 21:19	CUB0103	CB11821
Benzo(g,h,i)perylene	ND (2.99)	1000	1	02/22/11 21:19	CUB0103	CB11821
Benzo(k)fluoranthene	ND (2.99)	70	1	02/22/11 21:19	CUB0103	CB11821
Chrysene	ND (1.50)	70	1	02/22/11 21:19	CUB0103	CB11821
Dibenzo(a,h)Anthracene	ND (1.50)	0.7	1	02/22/11 21:19	CUB0103	CB11821
Fluoranthene	ND (2.99)	1000	1	02/22/11 21:19	CUB0103	CB11821
Fluorene	ND (2.99)	1000	1	02/22/11 21:19	CUB0103	CB11821
Indeno(1,2,3-cd)Pyrene	ND (2.99)	7	1	02/22/11 21:19	CUB0103	CB11821
Naphthalene	ND (2.99)	4	1	02/22/11 21:19	CUB0103	CB11821
Phenanthrene	ND (2.99)	10	1	02/22/11 21:19	CUB0103	CB11821
Pyrene	ND (2.99)	1000	1	02/22/11 21:19	CUB0103	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*71 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*71 %*		*30-130*
Surrogate: Nitrobenzene-d5	*80 %*		*30-130*
Surrogate: p-Terphenyl-d14	*85 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP3
Date Sampled: 02/16/11 12:50
Percent Solids: 9

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-14
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (24.4)	6010B	20	1	SVD	02/22/11 19:21	2.27	100	CB11820
Barium	**49.4** (24.4)	6010B	1000	1	SVD	02/22/11 19:21	2.27	100	CB11820
Cadmium	ND (4.92)	6010B	2	1	SVD	02/22/11 19:21	2.27	100	CB11820
Chromium	ND (9.8)	6010B	30	1	SVD	02/22/11 19:21	2.27	100	CB11820
Lead	ND (49.0)	6010B	300	1	SVD	02/22/11 19:21	2.27	100	CB11820
Mercury	ND (0.314)	7471B	20	1	KJK	02/22/11 18:13	0.7	40	CB11826
Selenium	ND (49.0)	6010B	400	1	SVD	02/22/11 19:21	2.27	100	CB11820
Silver	ND (4.92)	6010B	100	1	SVD	02/22/11 19:21	2.27	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP3
Date Sampled: 02/16/11 12:50
Percent Solids: 9
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-14
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (3.65)	0.7	1	02/22/11 21:53	CUB0103	CB11821
Acenaphthene	ND (3.65)	4	1	02/22/11 21:53	CUB0103	CB11821
Acenaphthylene	ND (3.65)	1	1	02/22/11 21:53	CUB0103	CB11821
Anthracene	ND (3.65)	1000	1	02/22/11 21:53	CUB0103	CB11821
Benzo(a)anthracene	ND (3.65)	7	1	02/22/11 21:53	CUB0103	CB11821
Benzo(a)pyrene	ND (1.83)	2	1	02/22/11 21:53	CUB0103	CB11821
Benzo(b)fluoranthene	ND (3.65)	7	1	02/22/11 21:53	CUB0103	CB11821
Benzo(g,h,i)perylene	ND (3.65)	1000	1	02/22/11 21:53	CUB0103	CB11821
Benzo(k)fluoranthene	ND (3.65)	70	1	02/22/11 21:53	CUB0103	CB11821
Chrysene	ND (1.83)	70	1	02/22/11 21:53	CUB0103	CB11821
Dibenzo(a,h)Anthracene	ND (1.83)	0.7	1	02/22/11 21:53	CUB0103	CB11821
Fluoranthene	ND (3.65)	1000	1	02/22/11 21:53	CUB0103	CB11821
Fluorene	ND (3.65)	1000	1	02/22/11 21:53	CUB0103	CB11821
Indeno(1,2,3-cd)Pyrene	ND (3.65)	7	1	02/22/11 21:53	CUB0103	CB11821
Naphthalene	ND (3.65)	4	1	02/22/11 21:53	CUB0103	CB11821
Phenanthrene	ND (3.65)	10	1	02/22/11 21:53	CUB0103	CB11821
Pyrene	ND (3.65)	1000	1	02/22/11 21:53	CUB0103	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*74 %*		*30-130*
Surrogate: Nitrobenzene-d5	*82 %*		*30-130*
Surrogate: p-Terphenyl-d14	*96 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP4
Date Sampled: 02/16/11 13:00
Percent Solids: 9

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-15
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (25.7)	6010B	20	1	SVD	02/22/11 19:25	2.16	100	CB11820
Barium	**54.7** (25.7)	6010B	1000	1	SVD	02/22/11 19:25	2.16	100	CB11820
Cadmium	ND (5.17)	6010B	2	1	SVD	02/22/11 19:25	2.16	100	CB11820
Chromium	ND (10.3)	6010B	30	1	SVD	02/22/11 19:25	2.16	100	CB11820
Lead	**52.6** (51.5)	6010B	300	1	SVD	02/22/11 19:25	2.16	100	CB11820
Mercury	ND (0.344)	7471B	20	1	KJK	02/22/11 18:16	0.64	40	CB11826
Selenium	ND (51.5)	6010B	400	1	SVD	02/22/11 19:25	2.16	100	CB11820
Silver	ND (5.17)	6010B	100	1	SVD	02/22/11 19:25	2.16	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP4
Date Sampled: 02/16/11 13:00
Percent Solids: 9
Initial Volume: 15.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-15
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (3.60)	0.7	1	02/22/11 22:26	CUB0103	CB11821
Acenaphthene	ND (3.60)	4	1	02/22/11 22:26	CUB0103	CB11821
Acenaphthylene	ND (3.60)	1	1	02/22/11 22:26	CUB0103	CB11821
Anthracene	ND (3.60)	1000	1	02/22/11 22:26	CUB0103	CB11821
Benzo(a)anthracene	ND (3.60)	7	1	02/22/11 22:26	CUB0103	CB11821
Benzo(a)pyrene	ND (1.81)	2	1	02/22/11 22:26	CUB0103	CB11821
Benzo(b)fluoranthene	ND (3.60)	7	1	02/22/11 22:26	CUB0103	CB11821
Benzo(g,h,i)perylene	ND (3.60)	1000	1	02/22/11 22:26	CUB0103	CB11821
Benzo(k)fluoranthene	ND (3.60)	70	1	02/22/11 22:26	CUB0103	CB11821
Chrysene	ND (1.81)	70	1	02/22/11 22:26	CUB0103	CB11821
Dibenzo(a,h)Anthracene	ND (1.81)	0.7	1	02/22/11 22:26	CUB0103	CB11821
Fluoranthene	ND (3.60)	1000	1	02/22/11 22:26	CUB0103	CB11821
Fluorene	ND (3.60)	1000	1	02/22/11 22:26	CUB0103	CB11821
Indeno(1,2,3-cd)Pyrene	ND (3.60)	7	1	02/22/11 22:26	CUB0103	CB11821
Naphthalene	ND (3.60)	4	1	02/22/11 22:26	CUB0103	CB11821
Phenanthrene	ND (3.60)	10	1	02/22/11 22:26	CUB0103	CB11821
Pyrene	ND (3.60)	1000	1	02/22/11 22:26	CUB0103	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*77 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*73 %*		*30-130*
Surrogate: Nitrobenzene-d5	*84 %*		*30-130*
Surrogate: p-Terphenyl-d14	*88 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP5
Date Sampled: 02/16/11 13:10
Percent Solids: 8

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-16
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (25.5)	6010B	20	1	SVD	02/22/11 19:30	2.45	100	CB11820
Barium	**61.1** (25.5)	6010B	1000	1	SVD	02/22/11 19:30	2.45	100	CB11820
Cadmium	ND (5.13)	6010B	2	1	SVD	02/22/11 19:30	2.45	100	CB11820
Chromium	ND (10.2)	6010B	30	1	SVD	02/22/11 19:30	2.45	100	CB11820
Lead	ND (51.0)	6010B	300	1	SVD	02/22/11 19:30	2.45	100	CB11820
Mercury	ND (0.375)	7471B	20	1	KJK	02/22/11 18:18	0.66	40	CB11826
Selenium	ND (51.0)	6010B	400	1	SVD	02/22/11 19:30	2.45	100	CB11820
Silver	ND (5.13)	6010B	100	1	SVD	02/22/11 19:30	2.45	100	CB11820

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP5
Date Sampled: 02/16/11 13:10
Percent Solids: 8
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-16
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (4.13)	0.7	1	02/23/11 15:48	CUB0109	CB11821
Acenaphthene	ND (4.13)	4	1	02/23/11 15:48	CUB0109	CB11821
Acenaphthylene	ND (4.13)	1	1	02/23/11 15:48	CUB0109	CB11821
Anthracene	ND (4.13)	1000	1	02/23/11 15:48	CUB0109	CB11821
Benzo(a)anthracene	ND (4.13)	7	1	02/23/11 15:48	CUB0109	CB11821
Benzo(a)pyrene	ND (2.07)	2	1	02/23/11 15:48	CUB0109	CB11821
Benzo(b)fluoranthene	ND (4.13)	7	1	02/23/11 15:48	CUB0109	CB11821
Benzo(g,h,i)perylene	ND (4.13)	1000	1	02/23/11 15:48	CUB0109	CB11821
Benzo(k)fluoranthene	ND (4.13)	70	1	02/23/11 15:48	CUB0109	CB11821
Chrysene	ND (2.07)	70	1	02/23/11 15:48	CUB0109	CB11821
Dibenzo(a,h)Anthracene	ND (2.07)	0.7	1	02/23/11 15:48	CUB0109	CB11821
Fluoranthene	ND (4.13)	1000	1	02/23/11 15:48	CUB0109	CB11821
Fluorene	ND (4.13)	1000	1	02/23/11 15:48	CUB0109	CB11821
Indeno(1,2,3-cd)Pyrene	ND (4.13)	7	1	02/23/11 15:48	CUB0109	CB11821
Naphthalene	ND (4.13)	4	1	02/23/11 15:48	CUB0109	CB11821
Phenanthrene	ND (4.13)	10	1	02/23/11 15:48	CUB0109	CB11821
Pyrene	ND (4.13)	1000	1	02/23/11 15:48	CUB0109	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*67 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*69 %*		*30-130*
Surrogate: Nitrobenzene-d5	*70 %*		*30-130*
Surrogate: p-Terphenyl-d14	*83 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP6
Date Sampled: 02/16/11 13:20
Percent Solids: 9

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-17
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (27.2)	6010B	20	1	SVD	02/22/11 15:28	2.04	100	CB11829
Barium	**48.5** (27.2)	6010B	1000	1	SVD	02/22/11 15:28	2.04	100	CB11829
Cadmium	ND (5.47)	6010B	2	1	SVD	02/22/11 15:28	2.04	100	CB11829
Chromium	ND (10.9)	6010B	30	1	SVD	02/22/11 15:28	2.04	100	CB11829
Lead	**106** (54.5)	6010B	300	1	SVD	02/22/11 15:28	2.04	100	CB11829
Mercury	ND (0.361)	7471B	20	1	KJK	02/22/11 18:21	0.61	40	CB11826
Selenium	ND (54.5)	6010B	400	1	SVD	02/22/11 15:28	2.04	100	CB11829
Silver	ND (5.47)	6010B	100	1	SVD	02/22/11 15:28	2.04	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP6
Date Sampled: 02/16/11 13:20
Percent Solids: 9
Initial Volume: 15.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-17
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (3.54)	0.7	1	02/23/11 19:42	CUB0109	CB11821
Acenaphthene	ND (3.54)	4	1	02/23/11 19:42	CUB0109	CB11821
Acenaphthylene	ND (3.54)	1	1	02/23/11 19:42	CUB0109	CB11821
Anthracene	ND (3.54)	1000	1	02/23/11 19:42	CUB0109	CB11821
Benzo(a)anthracene	ND (3.54)	7	1	02/23/11 19:42	CUB0109	CB11821
Benzo(a)pyrene	ND (1.77)	2	1	02/23/11 19:42	CUB0109	CB11821
Benzo(b)fluoranthene	ND (3.54)	7	1	02/23/11 19:42	CUB0109	CB11821
Benzo(g,h,i)perylene	ND (3.54)	1000	1	02/23/11 19:42	CUB0109	CB11821
Benzo(k)fluoranthene	ND (3.54)	70	1	02/23/11 19:42	CUB0109	CB11821
Chrysene	ND (1.77)	70	1	02/23/11 19:42	CUB0109	CB11821
Dibenzo(a,h)Anthracene	ND (1.77)	0.7	1	02/23/11 19:42	CUB0109	CB11821
Fluoranthene	ND (3.54)	1000	1	02/23/11 19:42	CUB0109	CB11821
Fluorene	ND (3.54)	1000	1	02/23/11 19:42	CUB0109	CB11821
Indeno(1,2,3-cd)Pyrene	ND (3.54)	7	1	02/23/11 19:42	CUB0109	CB11821
Naphthalene	ND (3.54)	4	1	02/23/11 19:42	CUB0109	CB11821
Phenanthrene	ND (3.54)	10	1	02/23/11 19:42	CUB0109	CB11821
Pyrene	ND (3.54)	1000	1	02/23/11 19:42	CUB0109	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*71 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*72 %*		*30-130*
Surrogate: Nitrobenzene-d5	*75 %*		*30-130*
Surrogate: p-Terphenyl-d14	*89 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP7
Date Sampled: 02/16/11 13:30
Percent Solids: 8

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-18
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (29.0)	6010B	20	1	SVD	02/22/11 15:33	2.15	100	CB11829
Barium	**51.7** (29.0)	6010B	1000	1	SVD	02/22/11 15:33	2.15	100	CB11829
Cadmium	ND (5.84)	6010B	2	1	SVD	02/22/11 15:33	2.15	100	CB11829
Chromium	ND (11.6)	6010B	30	1	SVD	02/22/11 15:33	2.15	100	CB11829
Lead	ND (58.2)	6010B	300	1	SVD	02/22/11 15:33	2.15	100	CB11829
Mercury	ND (0.399)	7471B	20	1	KJK	02/22/11 18:24	0.62	40	CB11826
Selenium	ND (58.2)	6010B	400	1	SVD	02/22/11 15:33	2.15	100	CB11829
Silver	ND (5.84)	6010B	100	1	SVD	02/22/11 15:33	2.15	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP7
Date Sampled: 02/16/11 13:30
Percent Solids: 8
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-18
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (4.16)	0.7	1	02/23/11 17:28	CUB0109	CB11821
Acenaphthene	ND (4.16)	4	1	02/23/11 17:28	CUB0109	CB11821
Acenaphthylene	ND (4.16)	1	1	02/23/11 17:28	CUB0109	CB11821
Anthracene	ND (4.16)	1000	1	02/23/11 17:28	CUB0109	CB11821
Benzo(a)anthracene	ND (4.16)	7	1	02/23/11 17:28	CUB0109	CB11821
Benzo(a)pyrene	ND (2.09)	2	1	02/23/11 17:28	CUB0109	CB11821
Benzo(b)fluoranthene	ND (4.16)	7	1	02/23/11 17:28	CUB0109	CB11821
Benzo(g,h,i)perylene	ND (4.16)	1000	1	02/23/11 17:28	CUB0109	CB11821
Benzo(k)fluoranthene	ND (4.16)	70	1	02/23/11 17:28	CUB0109	CB11821
Chrysene	ND (2.09)	70	1	02/23/11 17:28	CUB0109	CB11821
Dibenzo(a,h)Anthracene	ND (2.09)	0.7	1	02/23/11 17:28	CUB0109	CB11821
Fluoranthene	ND (4.16)	1000	1	02/23/11 17:28	CUB0109	CB11821
Fluorene	ND (4.16)	1000	1	02/23/11 17:28	CUB0109	CB11821
Indeno(1,2,3-cd)Pyrene	ND (4.16)	7	1	02/23/11 17:28	CUB0109	CB11821
Naphthalene	ND (4.16)	4	1	02/23/11 17:28	CUB0109	CB11821
Phenanthrene	ND (4.16)	10	1	02/23/11 17:28	CUB0109	CB11821
Pyrene	ND (4.16)	1000	1	02/23/11 17:28	CUB0109	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*73 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*76 %*		*30-130*
Surrogate: Nitrobenzene-d5	*81 %*		*30-130*
Surrogate: p-Terphenyl-d14	*86 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP8
Date Sampled: 02/16/11 13:40
Percent Solids: 9

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-19
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (23.2)	6010B	20	1	SVD	02/22/11 15:37	2.39	100	CB11829
Barium	**45.2** (23.2)	6010B	1000	1	SVD	02/22/11 15:37	2.39	100	CB11829
Cadmium	ND (4.67)	6010B	2	1	SVD	02/22/11 15:37	2.39	100	CB11829
Chromium	ND (9.3)	6010B	30	1	SVD	02/22/11 15:37	2.39	100	CB11829
Lead	ND (46.5)	6010B	300	1	SVD	02/22/11 15:37	2.39	100	CB11829
Mercury	ND (0.344)	7471B	20	1	KJK	02/22/11 16:04	0.64	40	CB11830
Selenium	ND (46.5)	6010B	400	1	SVD	02/22/11 15:37	2.39	100	CB11829
Silver	ND (4.67)	6010B	100	1	SVD	02/22/11 15:37	2.39	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP8
Date Sampled: 02/16/11 13:40
Percent Solids: 9
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-19
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (3.75)	0.7	1	02/23/11 18:02	CUB0109	CB11821
Acenaphthene	ND (3.75)	4	1	02/23/11 18:02	CUB0109	CB11821
Acenaphthylene	ND (3.75)	1	1	02/23/11 18:02	CUB0109	CB11821
Anthracene	ND (3.75)	1000	1	02/23/11 18:02	CUB0109	CB11821
Benzo(a)anthracene	ND (3.75)	7	1	02/23/11 18:02	CUB0109	CB11821
Benzo(a)pyrene	ND (1.88)	2	1	02/23/11 18:02	CUB0109	CB11821
Benzo(b)fluoranthene	ND (3.75)	7	1	02/23/11 18:02	CUB0109	CB11821
Benzo(g,h,i)perylene	ND (3.75)	1000	1	02/23/11 18:02	CUB0109	CB11821
Benzo(k)fluoranthene	ND (3.75)	70	1	02/23/11 18:02	CUB0109	CB11821
Chrysene	ND (1.88)	70	1	02/23/11 18:02	CUB0109	CB11821
Dibenzo(a,h)Anthracene	ND (1.88)	0.7	1	02/23/11 18:02	CUB0109	CB11821
Fluoranthene	ND (3.75)	1000	1	02/23/11 18:02	CUB0109	CB11821
Fluorene	ND (3.75)	1000	1	02/23/11 18:02	CUB0109	CB11821
Indeno(1,2,3-cd)Pyrene	ND (3.75)	7	1	02/23/11 18:02	CUB0109	CB11821
Naphthalene	ND (3.75)	4	1	02/23/11 18:02	CUB0109	CB11821
Phenanthrene	ND (3.75)	10	1	02/23/11 18:02	CUB0109	CB11821
Pyrene	ND (3.75)	1000	1	02/23/11 18:02	CUB0109	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*75 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*75 %*		*30-130*
Surrogate: Nitrobenzene-d5	*79 %*		*30-130*
Surrogate: p-Terphenyl-d14	*87 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP9
Date Sampled: 02/16/11 13:50
Percent Solids: 11

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-20
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (20.7)	6010B	20	1	SVD	02/22/11 15:41	2.19	100	CB11829
Barium	**43.1** (20.7)	6010B	1000	1	SVD	02/22/11 15:41	2.19	100	CB11829
Cadmium	ND (4.17)	6010B	2	1	SVD	02/22/11 15:41	2.19	100	CB11829
Chromium	ND (8.3)	6010B	30	1	SVD	02/22/11 15:41	2.19	100	CB11829
Lead	ND (41.5)	6010B	300	1	SVD	02/22/11 15:41	2.19	100	CB11829
Mercury	ND (0.265)	7471B	20	1	KJK	02/22/11 16:07	0.68	40	CB11830
Selenium	ND (41.5)	6010B	400	1	SVD	02/22/11 15:41	2.19	100	CB11829
Silver	ND (4.17)	6010B	100	1	SVD	02/22/11 15:41	2.19	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP9
Date Sampled: 02/16/11 13:50
Percent Solids: 11
Initial Volume: 15.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102199
ESS Laboratory Sample ID: 1102199-20
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/22/11 12:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (2.95)	0.7	1	02/23/11 14:07	CUB0109	CB12211
Acenaphthene	ND (2.95)	4	1	02/23/11 14:07	CUB0109	CB12211
Acenaphthylene	ND (2.95)	1	1	02/23/11 14:07	CUB0109	CB12211
Anthracene	ND (2.95)	1000	1	02/23/11 14:07	CUB0109	CB12211
Benzo(a)anthracene	ND (2.95)	7	1	02/23/11 14:07	CUB0109	CB12211
Benzo(a)pyrene	ND (1.48)	2	1	02/23/11 14:07	CUB0109	CB12211
Benzo(b)fluoranthene	ND (2.95)	7	1	02/23/11 14:07	CUB0109	CB12211
Benzo(g,h,i)perylene	ND (2.95)	1000	1	02/23/11 14:07	CUB0109	CB12211
Benzo(k)fluoranthene	ND (2.95)	70	1	02/23/11 14:07	CUB0109	CB12211
Chrysene	ND (1.48)	70	1	02/23/11 14:07	CUB0109	CB12211
Dibenzo(a,h)Anthracene	ND (1.48)	0.7	1	02/23/11 14:07	CUB0109	CB12211
Fluoranthene	ND (2.95)	1000	1	02/23/11 14:07	CUB0109	CB12211
Fluorene	ND (2.95)	1000	1	02/23/11 14:07	CUB0109	CB12211
Indeno(1,2,3-cd)Pyrene	ND (2.95)	7	1	02/23/11 14:07	CUB0109	CB12211
Naphthalene	ND (2.95)	4	1	02/23/11 14:07	CUB0109	CB12211
Phenanthrene	ND (2.95)	10	1	02/23/11 14:07	CUB0109	CB12211
Pyrene	ND (2.95)	1000	1	02/23/11 14:07	CUB0109	CB12211

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*66 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*77 %*		*30-130*
Surrogate: Nitrobenzene-d5	*70 %*		*30-130*
Surrogate: p-Terphenyl-d14	*95 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102199

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
3050B/6000/7000 Total Metals										
Batch CB11820 - 3050B										
Blank										
Arsenic	ND	2.5	mg/kg wet							
Barium	ND	2.5	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.0	mg/kg wet							
Lead	ND	5.0	mg/kg wet							
Selenium	ND	5.0	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
LCS										
Arsenic	85.2	8.9	mg/kg wet	92.60		92	80-120			
Barium	154	8.9	mg/kg wet	169.0		91	80-120			
Cadmium	55.8	1.79	mg/kg wet	61.80		90	80-120			
Chromium	64.9	3.6	mg/kg wet	71.30		91	80-120			
Lead	88.6	17.9	mg/kg wet	92.40		96	80-120			
Selenium	84.9	17.9	mg/kg wet	89.50		95	80-120			
Silver	31.4	1.79	mg/kg wet	34.40		91	80-120			
LCS Dup										
Arsenic	90.6	8.8	mg/kg wet	92.60		98	80-120	6	20	
Barium	167	8.8	mg/kg wet	169.0		99	80-120	8	20	
Cadmium	58.7	1.76	mg/kg wet	61.80		95	80-120	5	20	
Chromium	69.9	3.5	mg/kg wet	71.30		98	80-120	7	20	
Lead	93.1	17.6	mg/kg wet	92.40		101	80-120	5	20	
Selenium	89.0	17.6	mg/kg wet	89.50		99	80-120	5	20	
Silver	32.7	1.76	mg/kg wet	34.40		95	80-120	4	20	
Duplicate **Source: 1102199-01**										
Arsenic	ND	3.5	mg/kg dry		ND				35	
Barium	11.2	3.5	mg/kg dry		11.3			2	35	
Cadmium	0.450	0.71	mg/kg dry		0.346			26	35	
Chromium	15.0	1.4	mg/kg dry		18.7			22	35	
Lead	75.1	7.1	mg/kg dry		82.5			9	35	
Selenium	ND	7.1	mg/kg dry		ND				35	
Silver	ND	0.71	mg/kg dry		ND				35	
Duplicate **Source: 1102199-11**										
Arsenic	ND	24.0	mg/kg dry		4.26			200	35	
Barium	58.2	24.0	mg/kg dry		61.3			5	35	
Cadmium	ND	4.83	mg/kg dry		ND				35	
Chromium	2.00	9.6	mg/kg dry		1.70			17	35	
Lead	4.68	48.1	mg/kg dry		3.59			26	35	
Selenium	9.83	48.1	mg/kg dry		ND			200	35	
Silver	ND	4.83	mg/kg dry		ND				35	
Matrix Spike **Source: 1102199-01**										
Arsenic	30.6	3.3	mg/kg dry	32.97	ND	93	75-125			
Barium	47.1	3.3	mg/kg dry	32.97	11.3	108	75-125			
Cadmium	15.4	0.66	mg/kg dry	16.49	0.346	91	75-125			

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102199

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
3050B/6000/7000 Total Metals										
Batch CB11820 - 3050B										
Chromium	43.9	1.3	mg/kg dry	32.97	18.7	76	75-125			
Lead	95.1	6.6	mg/kg dry	32.97	82.5	38	75-125			MT
Selenium	61.1	6.6	mg/kg dry	65.95	ND	93	75-125			
Silver	15.1	0.66	mg/kg dry	16.49	ND	92	75-125			
Matrix Spike Source: 1102199-11										
Arsenic	221	26.6	mg/kg dry	265.8	4.26	81	75-125			
Barium	298	26.6	mg/kg dry	265.8	61.3	89	75-125			
Cadmium	113	5.34	mg/kg dry	132.9	ND	85	75-125			
Chromium	239	10.6	mg/kg dry	265.8	1.70	89	75-125			
Lead	245	53.2	mg/kg dry	265.8	3.59	91	75-125			
Selenium	463	53.2	mg/kg dry	531.6	ND	87	75-125			
Silver	115	5.34	mg/kg dry	132.9	ND	87	75-125			
Batch CB11826 - 245.1/7470A										
Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	4.24	0.773	mg/kg wet	3.770		112	80-120			
LCS Dup										
Mercury	4.28	0.798	mg/kg wet	3.770		114	80-120	0.9	20	
Duplicate Source: 1102199-08										
Mercury	ND	0.387	mg/kg dry		ND				35	
Duplicate Source: 1102199-18										
Mercury	ND	0.375	mg/kg dry		ND				35	
Matrix Spike Source: 1102199-08										
Mercury	2.99	0.412	mg/kg dry	2.500	ND	120	75-125			
Matrix Spike Source: 1102199-18										
Mercury	2.61	0.399	mg/kg dry	2.419	ND	108	75-125			
Matrix Spike Dup Source: 1102199-08										
Mercury	2.62	0.375	mg/kg dry	2.273	ND	115	75-125	4	35	
Matrix Spike Dup Source: 1102199-18										
Mercury	2.75	0.393	mg/kg dry	2.381	ND	116	75-125	7	35	
Batch CB11829 - 3050B										
Blank										
Arsenic	ND	2.5	mg/kg wet							
Barium	ND	2.5	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.0	mg/kg wet							
Lead	ND	5.0	mg/kg wet							
Selenium	ND	5.0	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
LCS										
Arsenic	86.8	9.4	mg/kg wet	92.60		94	80-120			

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102199

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
3050B/6000/7000 Total Metals										
Batch CB11829 - 3050B										
Barium	155	9.4	mg/kg wet	169.0		91	80-120			
Cadmium	58.6	1.90	mg/kg wet	61.80		95	80-120			
Chromium	65.2	3.8	mg/kg wet	71.30		92	80-120			
Lead	89.7	18.9	mg/kg wet	92.40		97	80-120			
Selenium	84.7	18.9	mg/kg wet	89.50		95	80-120			
Silver	30.6	1.90	mg/kg wet	34.40		89	80-120			
LCS Dup										
Arsenic	87.2	8.8	mg/kg wet	92.60		94	80-120	0.4	20	
Barium	152	8.8	mg/kg wet	169.0		90	80-120	2	20	
Cadmium	58.3	1.76	mg/kg wet	61.80		94	80-120	0.6	20	
Chromium	64.1	3.5	mg/kg wet	71.30		90	80-120	2	20	
Lead	87.5	17.6	mg/kg wet	92.40		95	80-120	2	20	
Selenium	83.7	17.6	mg/kg wet	89.50		94	80-120	1	20	
Silver	31.3	1.76	mg/kg wet	34.40		91	80-120	2	20	
Batch CB11830 - 7471A										
Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	4.24	0.811	mg/kg wet	3.770		112	80-120			
LCS Dup										
Mercury	5.16	0.773	mg/kg wet	3.770		137	80-120	20	20	B+
8270D Polynuclear Aromatic Hydrocarbons										
Batch CB11821 - 3546										
Blank										
2-Methylnaphthalene	ND	0.333	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.52*		mg/kg wet	*3.333*		*76*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.51*		mg/kg wet	*3.333*		*75*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102199

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Polynuclear Aromatic Hydrocarbons										
Batch CB11821 - 3546										
Surrogate: Nitrobenzene-d5	*2.58*		mg/kg wet	*3.333*		*77*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.25*		mg/kg wet	*3.333*		*97*	*30-130*			
LCS										
2-Methylnaphthalene	2.92	0.333	mg/kg wet	3.333		88	40-140			
Acenaphthene	3.17	0.333	mg/kg wet	3.333		95	40-140			
Acenaphthylene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Anthracene	3.19	0.333	mg/kg wet	3.333		96	40-140			
Benzo(a)anthracene	3.46	0.333	mg/kg wet	3.333		104	40-140			
Benzo(a)pyrene	3.51	0.167	mg/kg wet	3.333		105	40-140			
Benzo(b)fluoranthene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Benzo(g,h,i)perylene	3.54	0.333	mg/kg wet	3.333		106	40-140			
Benzo(k)fluoranthene	3.98	0.333	mg/kg wet	3.333		119	40-140			
Chrysene	3.44	0.167	mg/kg wet	3.333		103	40-140			
Dibenzo(a,h)Anthracene	3.51	0.167	mg/kg wet	3.333		105	40-140			
Fluoranthene	3.01	0.333	mg/kg wet	3.333		90	40-140			
Fluorene	3.27	0.333	mg/kg wet	3.333		98	40-140			
Indeno(1,2,3-cd)Pyrene	3.53	0.333	mg/kg wet	3.333		106	40-140			
Naphthalene	2.78	0.333	mg/kg wet	3.333		83	40-140			
Phenanthrene	3.10	0.333	mg/kg wet	3.333		93	40-140			
Pyrene	3.70	0.333	mg/kg wet	3.333		111	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.63*		mg/kg wet	*3.333*		*79*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.66*		mg/kg wet	*3.333*		*80*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.70*		mg/kg wet	*3.333*		*81*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.12*		mg/kg wet	*3.333*		*94*	*30-130*			
LCS Dup										
2-Methylnaphthalene	2.83	0.333	mg/kg wet	3.333		85	40-140	3	30	
Acenaphthene	3.02	0.333	mg/kg wet	3.333		91	40-140	5	30	
Acenaphthylene	2.68	0.333	mg/kg wet	3.333		80	40-140	5	30	
Anthracene	3.07	0.333	mg/kg wet	3.333		92	40-140	4	30	
Benzo(a)anthracene	3.34	0.333	mg/kg wet	3.333		100	40-140	3	30	
Benzo(a)pyrene	3.47	0.167	mg/kg wet	3.333		104	40-140	1	30	
Benzo(b)fluoranthene	3.32	0.333	mg/kg wet	3.333		100	40-140	14	30	
Benzo(g,h,i)perylene	3.34	0.333	mg/kg wet	3.333		100	40-140	6	30	
Benzo(k)fluoranthene	3.29	0.333	mg/kg wet	3.333		99	40-140	19	30	
Chrysene	3.31	0.167	mg/kg wet	3.333		99	40-140	4	30	
Dibenzo(a,h)Anthracene	3.34	0.167	mg/kg wet	3.333		100	40-140	5	30	
Fluoranthene	2.98	0.333	mg/kg wet	3.333		90	40-140	0.9	30	
Fluorene	3.21	0.333	mg/kg wet	3.333		96	40-140	2	30	
Indeno(1,2,3-cd)Pyrene	3.32	0.333	mg/kg wet	3.333		100	40-140	6	30	
Naphthalene	2.69	0.333	mg/kg wet	3.333		81	40-140	4	30	
Phenanthrene	2.94	0.333	mg/kg wet	3.333		88	40-140	5	30	
Pyrene	3.42	0.333	mg/kg wet	3.333		103	40-140	8	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.45*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.53*		mg/kg wet	*3.333*		*76*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102199

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Polynuclear Aromatic Hydrocarbons										
Batch CB11821 - 3546										
Surrogate: Nitrobenzene-d5	*2.57*		mg/kg wet	*3.333*		*77*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.88*		mg/kg wet	*3.333*		*86*	*30-130*			
Batch CB12211 - 3546										
Blank										
2-Methylnaphthalene	ND	0.333	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.65*		mg/kg wet	*3.333*		*79*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.42*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.53*		mg/kg wet	*3.333*		*76*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.17*		mg/kg wet	*3.333*		*95*	*30-130*			
LCS										
2-Methylnaphthalene	2.93	0.333	mg/kg wet	3.333		88	40-140			
Acenaphthene	3.20	0.333	mg/kg wet	3.333		96	40-140			
Acenaphthylene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Anthracene	3.24	0.333	mg/kg wet	3.333		97	40-140			
Benzo(a)anthracene	3.50	0.333	mg/kg wet	3.333		105	40-140			
Benzo(a)pyrene	3.56	0.167	mg/kg wet	3.333		107	40-140			
Benzo(b)fluoranthene	3.26	0.333	mg/kg wet	3.333		98	40-140			
Benzo(g,h,i)perylene	3.70	0.333	mg/kg wet	3.333		111	40-140			
Benzo(k)fluoranthene	3.54	0.333	mg/kg wet	3.333		106	40-140			
Chrysene	3.49	0.167	mg/kg wet	3.333		105	40-140			
Dibenzo(a,h)Anthracene	3.51	0.167	mg/kg wet	3.333		105	40-140			
Fluoranthene	3.05	0.333	mg/kg wet	3.333		91	40-140			
Fluorene	3.31	0.333	mg/kg wet	3.333		99	40-140			
Indeno(1,2,3-cd)Pyrene	3.55	0.333	mg/kg wet	3.333		106	40-140			
Naphthalene	2.81	0.333	mg/kg wet	3.333		84	40-140			
Phenanthrene	3.19	0.333	mg/kg wet	3.333		96	40-140			
Pyrene	3.69	0.333	mg/kg wet	3.333		111	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.65*		mg/kg wet	*3.333*		*79*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102199

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Polynuclear Aromatic Hydrocarbons										
Batch CB12211 - 3546										
Surrogate: 2-Fluorobiphenyl	*2.79*		mg/kg wet	*3.333*		*84*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.85*		mg/kg wet	*3.333*		*85*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.22*		mg/kg wet	*3.333*		*97*	*30-130*			
LCS Dup										
2-Methylnaphthalene	3.06	0.333	mg/kg wet	3.333		92	40-140	4	30	
Acenaphthene	3.28	0.333	mg/kg wet	3.333		98	40-140	3	30	
Acenaphthylene	2.88	0.333	mg/kg wet	3.333		86	40-140	5	30	
Anthracene	3.28	0.333	mg/kg wet	3.333		98	40-140	1	30	
Benzo(a)anthracene	3.57	0.333	mg/kg wet	3.333		107	40-140	2	30	
Benzo(a)pyrene	3.57	0.167	mg/kg wet	3.333		107	40-140	0.5	30	
Benzo(b)fluoranthene	3.06	0.333	mg/kg wet	3.333		92	40-140	6	30	
Benzo(g,h,i)perylene	3.48	0.333	mg/kg wet	3.333		104	40-140	6	30	
Benzo(k)fluoranthene	4.05	0.333	mg/kg wet	3.333		122	40-140	14	30	
Chrysene	3.52	0.167	mg/kg wet	3.333		106	40-140	0.9	30	
Dibenzo(a,h)Anthracene	3.43	0.167	mg/kg wet	3.333		103	40-140	2	30	
Fluoranthene	3.06	0.333	mg/kg wet	3.333		92	40-140	0.6	30	
Fluorene	3.43	0.333	mg/kg wet	3.333		103	40-140	4	30	
Indeno(1,2,3-cd)Pyrene	3.46	0.333	mg/kg wet	3.333		104	40-140	3	30	
Naphthalene	2.88	0.333	mg/kg wet	3.333		87	40-140	3	30	
Phenanthrene	3.16	0.333	mg/kg wet	3.333		95	40-140	0.8	30	
Pyrene	3.71	0.333	mg/kg wet	3.333		111	40-140	0.5	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.84*		mg/kg wet	*3.333*		*85*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.91*		mg/kg wet	*3.333*		*87*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.93*		mg/kg wet	*3.333*		*88*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.21*		mg/kg wet	*3.333*		*96*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102199

Notes and Definitions

U	Analyte included in the analysis, but not detected
MT	Due to high target values, matrix spike compound(s) is masked (MT).
D	Diluted.
C+	Continuing Calibration recovery is above upper control limit (C+).
B+	Blank Spike recovery is above upper control limit (B+).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102199

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002
http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424
http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002
http://www.nj.gov/dep/oqa/certlabs.htm

Pensylvania Potable and Non Potable Water, Solid and Hazardous Waste: 68-01752
http://files.dep.state.pa.us/RegionalResources/Labs/LabsPortalFiles/2009-0911_accredited_laboratories.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: Horsley & Witten
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 11020199
Date Project Due: 2/24/11
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present? *** No**
   Air No.:
2. Were Custody Seals Present? **No**
3. Were Custody Seals Intact? **N/A**
4. Is Radiation count < 100 CPM? **Yes**
5. Is a cooler present? **Yes**
   Cooler Temp: **4.4**
   Iced With: **Icepacks**
6. Was COC included with samples? **Yes**
7. Was COC signed and dated by client? **Yes**
8. Does the COC match the sample **Yes**
9. Is COC complete and correct? **Yes**
10. Are the samples properly preserved? **Yes**
11. Proper sample containers used? **Yes**
12. Any air bubbles in the VOA vials? **N/A**
13. Holding times exceeded? **No**
14. Sufficient sample volumes? **Yes**
15. Any Subcontracting needed? **No**
16. Are ESS labels on correct containers? **Yes** | **No**
17. Were samples received intact? **Yes** | **No**

ESS Sample IDs: _____
Sub Lab: _____
Analysis: _____
TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	4 oz Soil Jar	1	NP
2	Yes	4 oz Soil Jar	1	NP
3	Yes	4 oz Soil Jar	1	NP
4	Yes	4 oz Soil Jar	1	NP
5	Yes	4 oz Soil Jar	1	NP
6	Yes	4 oz Soil Jar	1	NP
7	Yes	4 oz Soil Jar	1	NP
8	Yes	4 oz Soil Jar	1	NP
9	Yes	4 oz Soil Jar	1	NP
10	Yes	4 oz Soil Jar	1	NP
11	Yes	4 oz Soil Jar	1	NP
12	Yes	4 oz Soil Jar	1	NP
13	Yes	4 oz Soil Jar	1	NP
14	Yes	4 oz Soil Jar	1	NP
15	Yes	4 oz Soil Jar	1	NP
16	Yes	4 oz Soil Jar	1	NP
17	Yes	4 oz Soil Jar	1	NP
18	Yes	4 oz Soil Jar	1	NP
19	Yes	4 oz Soil Jar	1	NP
20	Yes	4 oz Soil Jar	1	NP

Completed By: ED Date/Time: 2/16 2/17/11
Reviewed By: _____ Date/Time: 2/17/11

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Page 1 of 1

Turn Time (X) Standard Other ____
If faster than 5 days, prior approval by laboratory is required # ____

State where samples were collected from:
(MA) RI CT NH NJ NY ME Other ____

Is this project for any of the following:
MA-MCP Navy USACE Other ____

Reporting Limits: S1

ESS LAB PROJECT ID: 1102199

Electronic Deliverable Yes (X) No ____
Format: Excel (X) Access ____ PDF (X) Other ____

Co. Name	Project #	Project Name (20 Char. or less)
HORSLEY WITTEN	11024	BMA RISK

Contact Person	Address
GARY HEDMAN	90 ROUTE 6A

City	State	Zip	PO#
SANDWICH	MA	02563	

Telephone #	Fax #	Email Address
508.833.6600		ghedman@

ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	8260 VOA / 624 / 524.2	8021 MTBE/BTEX / 8015 GRO / VPH w/targets	8100 TPH / 8015 DRO	EPH w/o PAHs / EPH w/PAHs / EPH 4 Diesel	8081 Pesticides / 8082 PCB / 608 Pesticides / 608 PCB	8270 SVOA / 625 / PAH 8270	RCRA5 / RCRA8 / PP13 / TAL23	TCLP-RCRA8 / NBC7	MCP-METALS (13) / MCP-METALS (13) w/Hg	RCRA 8 Metals	PAHs			
01	2-16-11	1000	X		S	UG1 Outfall B+C	NP	1	G										X	X			
02	↓	1010	↓		↓	UG2	↓	↓	↓										↓	↓			
03		1020				UG3																	
04		1030				UG4																	
05		1040				UG5																	
06		1050				UG6																	
07		1100				UG7																	
08		1110				UG8																	
09	↓	1120	↓		↓	UG9	↓	↓	↓										↓	↓			
10	2-16-2011	1130	X		S	UG10	NP	1	G										X	X			

Container Type: P-Poly (G-Glass) S-Sterile V-VOA
Matrix: (S-Soil) SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present ~~Yes~~ ___ No Internal Use Only
Seals Intact ___ Yes ___ No NA: ~~[ ] Pickup~~
Cooler Temp: 4.4°
[ ] Technicians ____

Preservation Code (1- NP), 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- ____

Sampled by: GH

Comments:

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	2/17/1300		2/17/11 1303		2/17/11 1607		2/17/11 1607
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 B

ESS Laboratory

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CHAIN OF CUSTODY

Page 2 of 2

Turn Time: (X) Standard Other ____
If faster than 5 days, prior approval by laboratory is required # ____

State where samples were collected from: (MA) RI CT NH NJ NY ME Other ____

Is this project for any of the following: (MA-MCP) Navy USACE Other ____

Reporting Limits: S1

ESS LAB PROJECT ID: 1102199

Electronic Deliverable: Yes (X) No ____

Format: Excel (X) Access ____ PDF (X) Other ____

Co. Name	Project #	Project Name (20 Char. or less)
HORSLEY WITTEN	11024	BMA RISK

Contact Person	Address
GARY HEDMAN	90 ROUTE 6A

City	State	Zip	PO#
SANDWICH	MA	02563	

Telephone #	Fax #	Email Address
508·833·6600		ghedman@

Circle and/or Write Required Analysis

ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	8260 VOA / 624 / 524.2	8021 MTBE/BTEX / 8015 GRO / VPH w/targets	8100 TPH / 8015 DRO	EPH w/o PAHs / EPH w/PAHs / EPH 4 Diesel	8081 Pesticides / 8082 PCB / 608 Pesticides / 608 PCB	8270 SVOA / 625 / PAH 8270	RCRA5 / RCRA8 / PP13 / TAL23	TCLP-RCRA8 / NBC7	MCP-METALS (13) / MCP-METALS (13) w/Hg	RCRA 8 METALS	PAHs			
11	2·16·2011	1140	X		S	UG11 OUTFALL A	NP	1	G										X	X			
12	↓	1230	↓		↓	LP1 OUTFALL D	↓	↓	↓										↓	↓			
13		1240				LP2																	
14		1250				LP3																	
15		1300				LP4																	
16		1310				LP5																	
17		1320				LP6																	
18		1330				LP7																	
19	↓	1340	↓		↓	LP8	↓	↓	↓										↓	↓			
20	2·16·2011	1350	X		S	LP9	NP	1	G										X	X			

Container Type: P-Poly (G-Glass) S-Sterile V-VOA | Matrix: (S-Soil) SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present ___ Yes ___ No Internal Use Only

Seals Intact ___ Yes ___ No NA: ~~[ ] Pickup~~

Cooler Temp: 4.40 [ ] Technicians ____

Preservation Code: (1- NP) 2- HC1, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- ____

Sampled by: GH

Comments:

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	2.17 1300	[signature]	2/17/11 1303	[signature]	2/17/11 1607	[signature]	2/17/11 1610
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 B

CERTIFICATE OF ANALYSIS

Gary Hedman
Horsley & Witten
90 Route 6A
Sandwich, MA 02563

RE: BMA Risk (11024)
ESS Laboratory Work Order Number: 1102200

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102200

SAMPLE RECEIPT

The following samples were received on February 17, 2011 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has performed and reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for Metals and SVOA were analyzed for a subset of the required MCP list per the client's request.

Lab Number	SampleName	Matrix	Analysis
1102200-01	LP10	Soil	6010B, 7471B, 8270D
1102200-02	MD1	Soil	6010B, 7471B, 8270D
1102200-03	MD2	Soil	6010B, 7471B, 8270D
1102200-04	MD3	Soil	6010B, 7471B, 8270D
1102200-05	MD4	Soil	6010B, 7471B, 8270D
1102200-06	MD5	Soil	6010B, 7471B, 8270D
1102200-07	MD6	Soil	6010B, 7471B, 8270D
1102200-08	MD7	Soil	6010B, 7471B, 8270D
1102200-09	MD8	Soil	6010B, 7471B, 8270D
1102200-10	MD9	Soil	6010B, 7471B, 8270D
1102200-11	MD10	Soil	6010B, 7471B, 8270D

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102200

PROJECT NARRATIVE

3050B/6000/7000 Total Metals
CB11830-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Mercury (137% @ 80-120%)

8270D Polynuclear Aromatic Hydrocarbons
CUB0109-CCV1 **Continuing Calibration recovery is above upper control limit (C+).**
Benzo(k)fluoranthene (124% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102200

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1102200-01 through 1102200-11**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

( ) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH CAM IV A	( ) 8081 Pesticides CAM V B	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 8270 SVOC CAM II B	( ) 7010 Metals CAM III C	( ) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) 8330 Explosives CAM VIII A	( ) TO-15 VOC CAM IX B
(X) 6010 Metals CAM III A	( ) 6020 Metals CAM III D	( ) 8082 PCB CAM V A	( ) 6860 Perchlorate CAM VIII B	( ) 9014 Total Cyanide/PAC CAM VI A	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	a. VPH, EPH, APH and TO-15 only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	Yes (X) No ( )*
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (X)*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard Date: February 25, 2011

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP10
Date Sampled: 02/16/11 14:00
Percent Solids: 35

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-01
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (7.1)	6010B	20	1	SVD	02/22/11 15:45	2.01	100	CB11829
Barium	**9.2** (7.1)	6010B	1000	1	SVD	02/22/11 15:45	2.01	100	CB11829
Cadmium	ND (1.43)	6010B	2	1	SVD	02/22/11 15:45	2.01	100	CB11829
Chromium	ND (2.8)	6010B	30	1	SVD	02/22/11 15:45	2.01	100	CB11829
Lead	ND (14.2)	6010B	300	1	SVD	02/22/11 15:45	2.01	100	CB11829
Mercury	ND (0.083)	7471B	20	1	KJK	02/22/11 16:09	0.68	40	CB11830
Selenium	ND (14.2)	6010B	400	1	SVD	02/22/11 15:45	2.01	100	CB11829
Silver	ND (1.43)	6010B	100	1	SVD	02/22/11 15:45	2.01	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: LP10
Date Sampled: 02/16/11 14:00
Percent Solids: 35
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.921)	0.7	1	02/21/11 6:19	CUB0098	CB11803
Acenaphthene	ND (0.921)	4	1	02/21/11 6:19	CUB0098	CB11803
Acenaphthylene	ND (0.921)	1	1	02/21/11 6:19	CUB0098	CB11803
Anthracene	ND (0.921)	1000	1	02/21/11 6:19	CUB0098	CB11803
Benzo(a)anthracene	ND (0.921)	7	1	02/21/11 6:19	CUB0098	CB11803
Benzo(a)pyrene	ND (0.462)	2	1	02/21/11 6:19	CUB0098	CB11803
Benzo(b)fluoranthene	ND (0.921)	7	1	02/21/11 6:19	CUB0098	CB11803
Benzo(g,h,i)perylene	ND (0.921)	1000	1	02/21/11 6:19	CUB0098	CB11803
Benzo(k)fluoranthene	ND (0.921)	70	1	02/21/11 6:19	CUB0098	CB11803
Chrysene	ND (0.462)	70	1	02/21/11 6:19	CUB0098	CB11803
Dibenzo(a,h)Anthracene	ND (0.462)	0.7	1	02/21/11 6:19	CUB0098	CB11803
Fluoranthene	ND (0.921)	1000	1	02/21/11 6:19	CUB0098	CB11803
Fluorene	ND (0.921)	1000	1	02/21/11 6:19	CUB0098	CB11803
Indeno(1,2,3-cd)Pyrene	ND (0.921)	7	1	02/21/11 6:19	CUB0098	CB11803
Naphthalene	ND (0.921)	4	1	02/21/11 6:19	CUB0098	CB11803
Phenanthrene	ND (0.921)	10	1	02/21/11 6:19	CUB0098	CB11803
Pyrene	ND (0.921)	1000	1	02/21/11 6:19	CUB0098	CB11803

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*79 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*75 %*		*30-130*
Surrogate: Nitrobenzene-d5	*75 %*		*30-130*
Surrogate: p-Terphenyl-d14	*94 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD1
Date Sampled: 02/16/11 15:30
Percent Solids: 70

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-02
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (2.3)	6010B	20	1	SVD	02/22/11 15:49	3.14	100	CB11829
Barium	**8.5** (2.3)	6010B	1000	1	SVD	02/22/11 15:49	3.14	100	CB11829
Cadmium	ND (0.46)	6010B	2	1	SVD	02/22/11 15:49	3.14	100	CB11829
Chromium	**1.5** (0.9)	6010B	30	1	SVD	02/22/11 15:49	3.14	100	CB11829
Lead	**56.0** (4.6)	6010B	300	1	SVD	02/22/11 15:49	3.14	100	CB11829
Mercury	ND (0.025)	7471B	20	1	KJK	02/22/11 16:12	1.13	40	CB11830
Selenium	ND (4.6)	6010B	400	1	SVD	02/22/11 15:49	3.14	100	CB11829
Silver	ND (0.46)	6010B	100	1	SVD	02/22/11 15:49	3.14	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD1
Date Sampled: 02/16/11 15:30
Percent Solids: 70
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.449)	0.7	1	02/21/11 1:15	CUB0098	CB11803
Acenaphthene	ND (0.449)	4	1	02/21/11 1:15	CUB0098	CB11803
Acenaphthylene	ND (0.449)	1	1	02/21/11 1:15	CUB0098	CB11803
Anthracene	ND (0.449)	1000	1	02/21/11 1:15	CUB0098	CB11803
Benzo(a)anthracene	ND (0.449)	7	1	02/21/11 1:15	CUB0098	CB11803
Benzo(a)pyrene	ND (0.225)	2	1	02/21/11 1:15	CUB0098	CB11803
Benzo(b)fluoranthene	ND (0.449)	7	1	02/21/11 1:15	CUB0098	CB11803
Benzo(g,h,i)perylene	ND (0.449)	1000	1	02/21/11 1:15	CUB0098	CB11803
Benzo(k)fluoranthene	ND (0.449)	70	1	02/21/11 1:15	CUB0098	CB11803
Chrysene	ND (0.225)	70	1	02/21/11 1:15	CUB0098	CB11803
Dibenzo(a,h)Anthracene	ND (0.225)	0.7	1	02/21/11 1:15	CUB0098	CB11803
Fluoranthene	ND (0.449)	1000	1	02/21/11 1:15	CUB0098	CB11803
Fluorene	ND (0.449)	1000	1	02/21/11 1:15	CUB0098	CB11803
Indeno(1,2,3-cd)Pyrene	ND (0.449)	7	1	02/21/11 1:15	CUB0098	CB11803
Naphthalene	ND (0.449)	4	1	02/21/11 1:15	CUB0098	CB11803
Phenanthrene	ND (0.449)	10	1	02/21/11 1:15	CUB0098	CB11803
Pyrene	ND (0.449)	1000	1	02/21/11 1:15	CUB0098	CB11803

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*80 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*74 %*		*30-130*
Surrogate: Nitrobenzene-d5	*78 %*		*30-130*
Surrogate: p-Terphenyl-d14	*92 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD2
Date Sampled: 02/16/11 15:40
Percent Solids: 85

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-03
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (1.9)	6010B	20	1	SVD	02/22/11 15:53	3.16	100	CB11829
Barium	**3.9** (1.9)	6010B	1000	1	SVD	02/22/11 15:53	3.16	100	CB11829
Cadmium	ND (0.37)	6010B	2	1	SVD	02/22/11 15:53	3.16	100	CB11829
Chromium	**1.0** (0.7)	6010B	30	1	SVD	02/22/11 15:53	3.16	100	CB11829
Lead	ND (3.7)	6010B	300	1	SVD	02/22/11 15:53	3.16	100	CB11829
Mercury	ND (0.018)	7471B	20	1	KJK	02/22/11 16:15	1.26	40	CB11830
Selenium	ND (3.7)	6010B	400	1	SVD	02/22/11 15:53	3.16	100	CB11829
Silver	ND (0.37)	6010B	100	1	SVD	02/22/11 15:53	3.16	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD2
Date Sampled: 02/16/11 15:40
Percent Solids: 85
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.389)	0.7	1	02/21/11 1:49	CUB0098	CB11803
Acenaphthene	ND (0.389)	4	1	02/21/11 1:49	CUB0098	CB11803
Acenaphthylene	ND (0.389)	1	1	02/21/11 1:49	CUB0098	CB11803
Anthracene	ND (0.389)	1000	1	02/21/11 1:49	CUB0098	CB11803
Benzo(a)anthracene	ND (0.389)	7	1	02/21/11 1:49	CUB0098	CB11803
Benzo(a)pyrene	ND (0.195)	2	1	02/21/11 1:49	CUB0098	CB11803
Benzo(b)fluoranthene	ND (0.389)	7	1	02/21/11 1:49	CUB0098	CB11803
Benzo(g,h,i)perylene	ND (0.389)	1000	1	02/21/11 1:49	CUB0098	CB11803
Benzo(k)fluoranthene	ND (0.389)	70	1	02/21/11 1:49	CUB0098	CB11803
Chrysene	ND (0.195)	70	1	02/21/11 1:49	CUB0098	CB11803
Dibenzo(a,h)Anthracene	ND (0.195)	0.7	1	02/21/11 1:49	CUB0098	CB11803
Fluoranthene	ND (0.389)	1000	1	02/21/11 1:49	CUB0098	CB11803
Fluorene	ND (0.389)	1000	1	02/21/11 1:49	CUB0098	CB11803
Indeno(1,2,3-cd)Pyrene	ND (0.389)	7	1	02/21/11 1:49	CUB0098	CB11803
Naphthalene	ND (0.389)	4	1	02/21/11 1:49	CUB0098	CB11803
Phenanthrene	ND (0.389)	10	1	02/21/11 1:49	CUB0098	CB11803
Pyrene	ND (0.389)	1000	1	02/21/11 1:49	CUB0098	CB11803

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*76 %*		*30-130*
Surrogate: Nitrobenzene-d5	*76 %*		*30-130*
Surrogate: p-Terphenyl-d14	*101 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD3
Date Sampled: 02/16/11 15:50
Percent Solids: 20

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-04
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (11.4)	6010B	20	1	SVD	02/22/11 15:57	2.2	100	CB11829
Barium	**32.2** (11.4)	6010B	1000	1	SVD	02/22/11 15:57	2.2	100	CB11829
Cadmium	ND (2.28)	6010B	2	1	SVD	02/22/11 15:57	2.2	100	CB11829
Chromium	**6.5** (4.5)	6010B	30	1	SVD	02/22/11 15:57	2.2	100	CB11829
Lead	**24.9** (22.7)	6010B	300	1	SVD	02/22/11 15:57	2.2	100	CB11829
Mercury	ND (0.148)	7471B	20	1	KJK	02/22/11 16:17	0.67	40	CB11830
Selenium	ND (22.7)	6010B	400	1	SVD	02/22/11 15:57	2.2	100	CB11829
Silver	ND (2.28)	6010B	100	1	SVD	02/22/11 15:57	2.2	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD3
Date Sampled: 02/16/11 15:50
Percent Solids: 20
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (1.60)	0.7	1	02/21/11 2:23	CUB0098	CB11803
Acenaphthene	ND (1.60)	4	1	02/21/11 2:23	CUB0098	CB11803
Acenaphthylene	ND (1.60)	1	1	02/21/11 2:23	CUB0098	CB11803
Anthracene	ND (1.60)	1000	1	02/21/11 2:23	CUB0098	CB11803
Benzo(a)anthracene	ND (1.60)	7	1	02/21/11 2:23	CUB0098	CB11803
Benzo(a)pyrene	ND (0.803)	2	1	02/21/11 2:23	CUB0098	CB11803
Benzo(b)fluoranthene	ND (1.60)	7	1	02/21/11 2:23	CUB0098	CB11803
Benzo(g,h,i)perylene	ND (1.60)	1000	1	02/21/11 2:23	CUB0098	CB11803
Benzo(k)fluoranthene	ND (1.60)	70	1	02/21/11 2:23	CUB0098	CB11803
Chrysene	ND (0.803)	70	1	02/21/11 2:23	CUB0098	CB11803
Dibenzo(a,h)Anthracene	ND (0.803)	0.7	1	02/21/11 2:23	CUB0098	CB11803
Fluoranthene	ND (1.60)	1000	1	02/21/11 2:23	CUB0098	CB11803
Fluorene	ND (1.60)	1000	1	02/21/11 2:23	CUB0098	CB11803
Indeno(1,2,3-cd)Pyrene	ND (1.60)	7	1	02/21/11 2:23	CUB0098	CB11803
Naphthalene	ND (1.60)	4	1	02/21/11 2:23	CUB0098	CB11803
Phenanthrene	ND (1.60)	10	1	02/21/11 2:23	CUB0098	CB11803
Pyrene	ND (1.60)	1000	1	02/21/11 2:23	CUB0098	CB11803

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*66 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*64 %*		*30-130*
Surrogate: Nitrobenzene-d5	*63 %*		*30-130*
Surrogate: p-Terphenyl-d14	*92 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD4
Date Sampled: 02/16/11 16:00
Percent Solids: 71

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-05
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (2.0)	6010B	20	1	SVD	02/22/11 16:02	3.47	100	CB11829
Barium	**6.6** (2.0)	6010B	1000	1	SVD	02/22/11 16:02	3.47	100	CB11829
Cadmium	ND (0.41)	6010B	2	1	SVD	02/22/11 16:02	3.47	100	CB11829
Chromium	**1.2** (0.8)	6010B	30	1	SVD	02/22/11 16:02	3.47	100	CB11829
Lead	**13.5** (4.1)	6010B	300	1	SVD	02/22/11 16:02	3.47	100	CB11829
Mercury	ND (0.023)	7471B	20	1	KJK	02/22/11 16:20	1.19	40	CB11830
Selenium	ND (4.1)	6010B	400	1	SVD	02/22/11 16:02	3.47	100	CB11829
Silver	ND (0.41)	6010B	100	1	SVD	02/22/11 16:02	3.47	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD4
Date Sampled: 02/16/11 16:00
Percent Solids: 71
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.442)	0.7	1	02/21/11 2:56	CUB0098	CB11803
Acenaphthene	ND (0.442)	4	1	02/21/11 2:56	CUB0098	CB11803
Acenaphthylene	ND (0.442)	1	1	02/21/11 2:56	CUB0098	CB11803
Anthracene	ND (0.442)	1000	1	02/21/11 2:56	CUB0098	CB11803
Benzo(a)anthracene	ND (0.442)	7	1	02/21/11 2:56	CUB0098	CB11803
Benzo(a)pyrene	ND (0.222)	2	1	02/21/11 2:56	CUB0098	CB11803
Benzo(b)fluoranthene	ND (0.442)	7	1	02/21/11 2:56	CUB0098	CB11803
Benzo(g,h,i)perylene	ND (0.442)	1000	1	02/21/11 2:56	CUB0098	CB11803
Benzo(k)fluoranthene	ND (0.442)	70	1	02/21/11 2:56	CUB0098	CB11803
Chrysene	ND (0.222)	70	1	02/21/11 2:56	CUB0098	CB11803
Dibenzo(a,h)Anthracene	ND (0.222)	0.7	1	02/21/11 2:56	CUB0098	CB11803
Fluoranthene	ND (0.442)	1000	1	02/21/11 2:56	CUB0098	CB11803
Fluorene	ND (0.442)	1000	1	02/21/11 2:56	CUB0098	CB11803
Indeno(1,2,3-cd)Pyrene	ND (0.442)	7	1	02/21/11 2:56	CUB0098	CB11803
Naphthalene	ND (0.442)	4	1	02/21/11 2:56	CUB0098	CB11803
Phenanthrene	ND (0.442)	10	1	02/21/11 2:56	CUB0098	CB11803
Pyrene	ND (0.442)	1000	1	02/21/11 2:56	CUB0098	CB11803

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*76 %*		*30-130*
Surrogate: Nitrobenzene-d5	*77 %*		*30-130*
Surrogate: p-Terphenyl-d14	*104 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD5
Date Sampled: 02/16/11 16:10
Percent Solids: 32

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-06
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (6.6)	6010B	20	1	SVD	02/22/11 16:06	2.37	100	CB11829
Barium	**31.3** (6.6)	6010B	1000	1	SVD	02/22/11 16:06	2.37	100	CB11829
Cadmium	ND (1.33)	6010B	2	1	SVD	02/22/11 16:06	2.37	100	CB11829
Chromium	**5.9** (2.6)	6010B	30	1	SVD	02/22/11 16:06	2.37	100	CB11829
Lead	ND (13.2)	6010B	300	1	SVD	02/22/11 16:06	2.37	100	CB11829
Mercury	ND (0.103)	7471B	20	1	KJK	02/22/11 16:23	0.6	40	CB11830
Selenium	ND (13.2)	6010B	400	1	SVD	02/22/11 16:06	2.37	100	CB11829
Silver	ND (1.33)	6010B	100	1	SVD	02/22/11 16:06	2.37	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD5
Date Sampled: 02/16/11 16:10
Percent Solids: 32
Initial Volume: 15.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (1.02)	0.7	1	02/21/11 3:30	CUB0098	CB11803
Acenaphthene	ND (1.02)	4	1	02/21/11 3:30	CUB0098	CB11803
Acenaphthylene	ND (1.02)	1	1	02/21/11 3:30	CUB0098	CB11803
Anthracene	ND (1.02)	1000	1	02/21/11 3:30	CUB0098	CB11803
Benzo(a)anthracene	ND (1.02)	7	1	02/21/11 3:30	CUB0098	CB11803
Benzo(a)pyrene	ND (0.512)	2	1	02/21/11 3:30	CUB0098	CB11803
Benzo(b)fluoranthene	ND (1.02)	7	1	02/21/11 3:30	CUB0098	CB11803
Benzo(g,h,i)perylene	ND (1.02)	1000	1	02/21/11 3:30	CUB0098	CB11803
Benzo(k)fluoranthene	ND (1.02)	70	1	02/21/11 3:30	CUB0098	CB11803
Chrysene	ND (0.512)	70	1	02/21/11 3:30	CUB0098	CB11803
Dibenzo(a,h)Anthracene	ND (0.512)	0.7	1	02/21/11 3:30	CUB0098	CB11803
Fluoranthene	ND (1.02)	1000	1	02/21/11 3:30	CUB0098	CB11803
Fluorene	ND (1.02)	1000	1	02/21/11 3:30	CUB0098	CB11803
Indeno(1,2,3-cd)Pyrene	ND (1.02)	7	1	02/21/11 3:30	CUB0098	CB11803
Naphthalene	ND (1.02)	4	1	02/21/11 3:30	CUB0098	CB11803
Phenanthrene	ND (1.02)	10	1	02/21/11 3:30	CUB0098	CB11803
Pyrene	ND (1.02)	1000	1	02/21/11 3:30	CUB0098	CB11803

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*75 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*74 %*		*30-130*
Surrogate: Nitrobenzene-d5	*74 %*		*30-130*
Surrogate: p-Terphenyl-d14	*93 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD6
Date Sampled: 02/16/11 16:20
Percent Solids: 44

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-07
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (3.1)	6010B	20	1	SVD	02/22/11 16:35	3.7	100	CB11829
Barium	**10.5** (3.1)	6010B	1000	1	SVD	02/22/11 16:35	3.7	100	CB11829
Cadmium	ND (0.62)	6010B	2	1	SVD	02/22/11 16:35	3.7	100	CB11829
Chromium	**2.0** (1.2)	6010B	30	1	SVD	02/22/11 16:35	3.7	100	CB11829
Lead	**34.2** (6.1)	6010B	300	1	SVD	02/22/11 16:35	3.7	100	CB11829
Mercury	ND (0.041)	7471B	20	1	KJK	02/22/11 16:25	1.09	40	CB11830
Selenium	ND (6.1)	6010B	400	1	SVD	02/22/11 16:35	3.7	100	CB11829
Silver	ND (0.62)	6010B	100	1	SVD	02/22/11 16:35	3.7	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD6
Date Sampled: 02/16/11 16:20
Percent Solids: 44
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

MA - S1GW1

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.757)	0.7	1	02/21/11 4:04	CUB0098	CB11803
Acenaphthene	ND (0.757)	4	1	02/21/11 4:04	CUB0098	CB11803
Acenaphthylene	ND (0.757)	1	1	02/21/11 4:04	CUB0098	CB11803
Anthracene	ND (0.757)	1000	1	02/21/11 4:04	CUB0098	CB11803
Benzo(a)anthracene	ND (0.757)	7	1	02/21/11 4:04	CUB0098	CB11803
Benzo(a)pyrene	ND (0.380)	2	1	02/21/11 4:04	CUB0098	CB11803
Benzo(b)fluoranthene	ND (0.757)	7	1	02/21/11 4:04	CUB0098	CB11803
Benzo(g,h,i)perylene	ND (0.757)	1000	1	02/21/11 4:04	CUB0098	CB11803
Benzo(k)fluoranthene	ND (0.757)	70	1	02/21/11 4:04	CUB0098	CB11803
Chrysene	ND (0.380)	70	1	02/21/11 4:04	CUB0098	CB11803
Dibenzo(a,h)Anthracene	ND (0.380)	0.7	1	02/21/11 4:04	CUB0098	CB11803
Fluoranthene	ND (0.757)	1000	1	02/21/11 4:04	CUB0098	CB11803
Fluorene	ND (0.757)	1000	1	02/21/11 4:04	CUB0098	CB11803
Indeno(1,2,3-cd)Pyrene	ND (0.757)	7	1	02/21/11 4:04	CUB0098	CB11803
Naphthalene	ND (0.757)	4	1	02/21/11 4:04	CUB0098	CB11803
Phenanthrene	ND (0.757)	10	1	02/21/11 4:04	CUB0098	CB11803
Pyrene	ND (0.757)	1000	1	02/21/11 4:04	CUB0098	CB11803

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*79 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*79 %*		*30-130*
Surrogate: Nitrobenzene-d5	*76 %*		*30-130*
Surrogate: p-Terphenyl-d14	*103 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD7
Date Sampled: 02/16/11 16:30
Percent Solids: 10

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-08
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (21.3)	6010B	20	1	SVD	02/22/11 16:39	2.35	100	CB11829
Barium	**56.5** (21.3)	6010B	1000	1	SVD	02/22/11 16:39	2.35	100	CB11829
Cadmium	ND (4.28)	6010B	2	1	SVD	02/22/11 16:39	2.35	100	CB11829
Chromium	ND (8.5)	6010B	30	1	SVD	02/22/11 16:39	2.35	100	CB11829
Lead	ND (42.6)	6010B	300	1	SVD	02/22/11 16:39	2.35	100	CB11829
Mercury	ND (0.283)	7471B	20	1	KJK	02/22/11 16:28	0.7	40	CB11830
Selenium	ND (42.6)	6010B	400	1	SVD	02/22/11 16:39	2.35	100	CB11829
Silver	ND (4.28)	6010B	100	1	SVD	02/22/11 16:39	2.35	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD7
Date Sampled: 02/16/11 16:30
Percent Solids: 10
Initial Volume: 15.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (3.18)	0.7	1	02/21/11 4:38	CUB0098	CB11803
Acenaphthene	ND (3.18)	4	1	02/21/11 4:38	CUB0098	CB11803
Acenaphthylene	ND (3.18)	1	1	02/21/11 4:38	CUB0098	CB11803
Anthracene	ND (3.18)	1000	1	02/21/11 4:38	CUB0098	CB11803
Benzo(a)anthracene	ND (3.18)	7	1	02/21/11 4:38	CUB0098	CB11803
Benzo(a)pyrene	ND (1.60)	2	1	02/21/11 4:38	CUB0098	CB11803
Benzo(b)fluoranthene	ND (3.18)	7	1	02/21/11 4:38	CUB0098	CB11803
Benzo(g,h,i)perylene	ND (3.18)	1000	1	02/21/11 4:38	CUB0098	CB11803
Benzo(k)fluoranthene	ND (3.18)	70	1	02/21/11 4:38	CUB0098	CB11803
Chrysene	ND (1.60)	70	1	02/21/11 4:38	CUB0098	CB11803
Dibenzo(a,h)Anthracene	ND (1.60)	0.7	1	02/21/11 4:38	CUB0098	CB11803
Fluoranthene	ND (3.18)	1000	1	02/21/11 4:38	CUB0098	CB11803
Fluorene	ND (3.18)	1000	1	02/21/11 4:38	CUB0098	CB11803
Indeno(1,2,3-cd)Pyrene	ND (3.18)	7	1	02/21/11 4:38	CUB0098	CB11803
Naphthalene	ND (3.18)	4	1	02/21/11 4:38	CUB0098	CB11803
Phenanthrene	ND (3.18)	10	1	02/21/11 4:38	CUB0098	CB11803
Pyrene	ND (3.18)	1000	1	02/21/11 4:38	CUB0098	CB11803

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*80 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*73 %*		*30-130*
Surrogate: Nitrobenzene-d5	*76 %*		*30-130*
Surrogate: p-Terphenyl-d14	*94 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD8
Date Sampled: 02/16/11 16:40
Percent Solids: 11

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-09
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (19.5)	6010B	20	1	SVD	02/22/11 16:44	2.33	100	CB11829
Barium	**55.1** (19.5)	6010B	1000	1	SVD	02/22/11 16:44	2.33	100	CB11829
Cadmium	ND (3.92)	6010B	2	1	SVD	02/22/11 16:44	2.33	100	CB11829
Chromium	ND (7.8)	6010B	30	1	SVD	02/22/11 16:44	2.33	100	CB11829
Lead	ND (39.0)	6010B	300	1	SVD	02/22/11 16:44	2.33	100	CB11829
Mercury	ND (0.277)	7471B	20	1	KJK	02/22/11 16:50	0.65	40	CB11830
Selenium	ND (39.0)	6010B	400	1	SVD	02/22/11 16:44	2.33	100	CB11829
Silver	ND (3.92)	6010B	100	1	SVD	02/22/11 16:44	2.33	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD8
Date Sampled: 02/16/11 16:40
Percent Solids: 11
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

MA - S1GW1

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (3.03)	0.7	1	02/21/11 5:12	CUB0098	CB11803
Acenaphthene	ND (3.03)	4	1	02/21/11 5:12	CUB0098	CB11803
Acenaphthylene	ND (3.03)	1	1	02/21/11 5:12	CUB0098	CB11803
Anthracene	ND (3.03)	1000	1	02/21/11 5:12	CUB0098	CB11803
Benzo(a)anthracene	ND (3.03)	7	1	02/21/11 5:12	CUB0098	CB11803
Benzo(a)pyrene	ND (1.52)	2	1	02/21/11 5:12	CUB0098	CB11803
Benzo(b)fluoranthene	ND (3.03)	7	1	02/21/11 5:12	CUB0098	CB11803
Benzo(g,h,i)perylene	ND (3.03)	1000	1	02/21/11 5:12	CUB0098	CB11803
Benzo(k)fluoranthene	ND (3.03)	70	1	02/21/11 5:12	CUB0098	CB11803
Chrysene	ND (1.52)	70	1	02/21/11 5:12	CUB0098	CB11803
Dibenzo(a,h)Anthracene	ND (1.52)	0.7	1	02/21/11 5:12	CUB0098	CB11803
Fluoranthene	ND (3.03)	1000	1	02/21/11 5:12	CUB0098	CB11803
Fluorene	ND (3.03)	1000	1	02/21/11 5:12	CUB0098	CB11803
Indeno(1,2,3-cd)Pyrene	ND (3.03)	7	1	02/21/11 5:12	CUB0098	CB11803
Naphthalene	ND (3.03)	4	1	02/21/11 5:12	CUB0098	CB11803
Phenanthrene	ND (3.03)	10	1	02/21/11 5:12	CUB0098	CB11803
Pyrene	ND (3.03)	1000	1	02/21/11 5:12	CUB0098	CB11803

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*68 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*63 %*		*30-130*
Surrogate: Nitrobenzene-d5	*66 %*		*30-130*
Surrogate: p-Terphenyl-d14	*86 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD9
Date Sampled: 02/16/11 16:50
Percent Solids: 14

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-10
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (15.0)	6010B	20	1	SVD	02/22/11 16:48	2.38	100	CB11829
Barium	**62.2** (15.0)	6010B	1000	1	SVD	02/22/11 16:48	2.38	100	CB11829
Cadmium	ND (3.02)	6010B	2	1	SVD	02/22/11 16:48	2.38	100	CB11829
Chromium	**9.7** (6.0)	6010B	30	1	SVD	02/22/11 16:48	2.38	100	CB11829
Lead	ND (30.0)	6010B	300	1	SVD	02/22/11 16:48	2.38	100	CB11829
Mercury	ND (0.211)	7471B	20	1	KJK	02/22/11 16:52	0.67	40	CB11830
Selenium	ND (30.0)	6010B	400	1	SVD	02/22/11 16:48	2.38	100	CB11829
Silver	ND (3.02)	6010B	100	1	SVD	02/22/11 16:48	2.38	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD9
Date Sampled: 02/16/11 16:50
Percent Solids: 14
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

MA - S1GW1

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (2.38)	0.7	1	02/21/11 5:45	CUB0098	CB11803
Acenaphthene	ND (2.38)	4	1	02/21/11 5:45	CUB0098	CB11803
Acenaphthylene	ND (2.38)	1	1	02/21/11 5:45	CUB0098	CB11803
Anthracene	ND (2.38)	1000	1	02/21/11 5:45	CUB0098	CB11803
Benzo(a)anthracene	ND (2.38)	7	1	02/21/11 5:45	CUB0098	CB11803
Benzo(a)pyrene	ND (1.19)	2	1	02/21/11 5:45	CUB0098	CB11803
Benzo(b)fluoranthene	ND (2.38)	7	1	02/21/11 5:45	CUB0098	CB11803
Benzo(g,h,i)perylene	ND (2.38)	1000	1	02/21/11 5:45	CUB0098	CB11803
Benzo(k)fluoranthene	ND (2.38)	70	1	02/21/11 5:45	CUB0098	CB11803
Chrysene	ND (1.19)	70	1	02/21/11 5:45	CUB0098	CB11803
Dibenzo(a,h)Anthracene	ND (1.19)	0.7	1	02/21/11 5:45	CUB0098	CB11803
Fluoranthene	ND (2.38)	1000	1	02/21/11 5:45	CUB0098	CB11803
Fluorene	ND (2.38)	1000	1	02/21/11 5:45	CUB0098	CB11803
Indeno(1,2,3-cd)Pyrene	ND (2.38)	7	1	02/21/11 5:45	CUB0098	CB11803
Naphthalene	ND (2.38)	4	1	02/21/11 5:45	CUB0098	CB11803
Phenanthrene	ND (2.38)	10	1	02/21/11 5:45	CUB0098	CB11803
Pyrene	ND (2.38)	1000	1	02/21/11 5:45	CUB0098	CB11803

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*60 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*55 %*		*30-130*
Surrogate: Nitrobenzene-d5	*61 %*		*30-130*
Surrogate: p-Terphenyl-d14	*81 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD10
Date Sampled: 02/16/11 17:00
Percent Solids: 11

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-11
Sample Matrix: Soil
Units: mg/kg dry

3050B/6000/7000 Total Metals

MA - S1GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (20.1)	6010B	20	1	SVD	02/22/11 16:52	2.26	100	CB11829
Barium	**71.5** (20.1)	6010B	1000	1	SVD	02/22/11 16:52	2.26	100	CB11829
Cadmium	ND (4.04)	6010B	2	1	SVD	02/22/11 16:52	2.26	100	CB11829
Chromium	**10.1** (8.0)	6010B	30	1	SVD	02/22/11 16:52	2.26	100	CB11829
Lead	**75.4** (40.2)	6010B	300	1	SVD	02/22/11 16:52	2.26	100	CB11829
Mercury	ND (0.257)	7471B	20	1	KJK	02/22/11 16:55	0.7	40	CB11830
Selenium	ND (40.2)	6010B	400	1	SVD	02/22/11 16:52	2.26	100	CB11829
Silver	ND (4.04)	6010B	100	1	SVD	02/22/11 16:52	2.26	100	CB11829

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: MD10
Date Sampled: 02/16/11 17:00
Percent Solids: 11
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1102200
ESS Laboratory Sample ID: 1102200-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 2/18/11 13:00

8270D Polynuclear Aromatic Hydrocarbons

		MA - S1GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (3.03)	0.7	1	02/20/11 20:45	CUB0098	CB11821
Acenaphthene	ND (3.03)	4	1	02/20/11 20:45	CUB0098	CB11821
Acenaphthylene	ND (3.03)	1	1	02/20/11 20:45	CUB0098	CB11821
Anthracene	ND (3.03)	1000	1	02/20/11 20:45	CUB0098	CB11821
Benzo(a)anthracene	ND (3.03)	7	1	02/20/11 20:45	CUB0098	CB11821
Benzo(a)pyrene	ND (1.52)	2	1	02/20/11 20:45	CUB0098	CB11821
Benzo(b)fluoranthene	ND (3.03)	7	1	02/20/11 20:45	CUB0098	CB11821
Benzo(g,h,i)perylene	ND (3.03)	1000	1	02/20/11 20:45	CUB0098	CB11821
Benzo(k)fluoranthene	ND (3.03)	70	1	02/20/11 20:45	CUB0098	CB11821
Chrysene	ND (1.52)	70	1	02/20/11 20:45	CUB0098	CB11821
Dibenzo(a,h)Anthracene	ND (1.52)	0.7	1	02/20/11 20:45	CUB0098	CB11821
Fluoranthene	ND (3.03)	1000	1	02/20/11 20:45	CUB0098	CB11821
Fluorene	ND (3.03)	1000	1	02/20/11 20:45	CUB0098	CB11821
Indeno(1,2,3-cd)Pyrene	ND (3.03)	7	1	02/20/11 20:45	CUB0098	CB11821
Naphthalene	ND (3.03)	4	1	02/20/11 20:45	CUB0098	CB11821
Phenanthrene	ND (3.03)	10	1	02/20/11 20:45	CUB0098	CB11821
Pyrene	ND (3.03)	1000	1	02/20/11 20:45	CUB0098	CB11821

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*73 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*67 %*		*30-130*
Surrogate: Nitrobenzene-d5	*72 %*		*30-130*
Surrogate: p-Terphenyl-d14	*96 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102200

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
3050B/6000/7000 Total Metals										
Batch CB11829 - 3050B										
Blank										
Arsenic	ND	2.5	mg/kg wet							
Barium	ND	2.5	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.0	mg/kg wet							
Lead	ND	5.0	mg/kg wet							
Selenium	ND	5.0	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
LCS										
Arsenic	86.8	9.4	mg/kg wet	92.60		94	80-120			
Barium	155	9.4	mg/kg wet	169.0		91	80-120			
Cadmium	58.6	1.90	mg/kg wet	61.80		95	80-120			
Chromium	65.2	3.8	mg/kg wet	71.30		92	80-120			
Lead	89.7	18.9	mg/kg wet	92.40		97	80-120			
Selenium	84.7	18.9	mg/kg wet	89.50		95	80-120			
Silver	30.6	1.90	mg/kg wet	34.40		89	80-120			
LCS Dup										
Arsenic	87.2	8.8	mg/kg wet	92.60		94	80-120	0.4	20	
Barium	152	8.8	mg/kg wet	169.0		90	80-120	2	20	
Cadmium	58.3	1.76	mg/kg wet	61.80		94	80-120	0.6	20	
Chromium	64.1	3.5	mg/kg wet	71.30		90	80-120	2	20	
Lead	87.5	17.6	mg/kg wet	92.40		95	80-120	2	20	
Selenium	83.7	17.6	mg/kg wet	89.50		94	80-120	1	20	
Silver	31.3	1.76	mg/kg wet	34.40		91	80-120	2	20	
Duplicate **Source: 1102200-06**										
Arsenic	2.43	6.5	mg/kg dry		2.48			2	35	
Barium	34.2	6.5	mg/kg dry		31.3			9	35	
Cadmium	ND	1.30	mg/kg dry		ND				35	
Chromium	6.49	2.6	mg/kg dry		5.92			9	35	
Lead	6.54	12.9	mg/kg dry		6.41			2	35	
Selenium	2.74	12.9	mg/kg dry		1.92			35	35	
Silver	ND	1.30	mg/kg dry		ND				35	
Matrix Spike **Source: 1102200-06**										
Arsenic	67.4	7.6	mg/kg dry	76.22	2.48	85	75-125			
Barium	101	7.6	mg/kg dry	76.22	31.3	92	75-125			
Cadmium	33.1	1.53	mg/kg dry	38.11	ND	87	75-125			
Chromium	74.5	3.0	mg/kg dry	76.22	5.92	90	75-125			
Lead	74.1	15.3	mg/kg dry	76.22	6.41	89	75-125			
Selenium	136	15.3	mg/kg dry	152.4	1.92	88	75-125			
Silver	33.6	1.53	mg/kg dry	38.11	ND	88	75-125			
Batch CB11830 - 7471A										
Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102200

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
3050B/6000/7000 Total Metals										
Batch CB11830 - 7471A										
Mercury	4.24	0.811	mg/kg wet	3.770		112	80-120			
LCS Dup										
Mercury	5.16	0.773	mg/kg wet	3.770		137	80-120	20	20	B+
Duplicate **Source: 1102200-08**										
Mercury	ND	0.319	mg/kg dry		ND				35	
Matrix Spike **Source: 1102200-08**										
Mercury	2.09	0.309	mg/kg dry	1.875	ND	112	75-125			
Matrix Spike Dup **Source: 1102200-08**										
Mercury	2.16	0.309	mg/kg dry	1.875	ND	115	75-125	3	35	
8270D Polynuclear Aromatic Hydrocarbons										
Batch CB11803 - 3546										
Blank										
2-Methylnaphthalene	ND	0.333	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.77*		mg/kg wet	*3.333*		*83*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.65*		mg/kg wet	*3.333*		*80*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.75*		mg/kg wet	*3.333*		*83*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.17*		mg/kg wet	*3.333*		*95*	*30-130*			
LCS										
2-Methylnaphthalene	2.50	0.333	mg/kg wet	3.333		75	40-140			
Acenaphthene	2.79	0.333	mg/kg wet	3.333		84	40-140			
Acenaphthylene	2.52	0.333	mg/kg wet	3.333		76	40-140			
Anthracene	3.06	0.333	mg/kg wet	3.333		92	40-140			
Benzo(a)anthracene	3.33	0.333	mg/kg wet	3.333		100	40-140			
Benzo(a)pyrene	3.29	0.167	mg/kg wet	3.333		99	40-140			
Benzo(b)fluoranthene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Benzo(g,h,i)perylene	2.54	0.333	mg/kg wet	3.333		76	40-140			
Benzo(k)fluoranthene	3.89	0.333	mg/kg wet	3.333		117	40-140			

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102200

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Polynuclear Aromatic Hydrocarbons										
Batch CB11803 - 3546										
Chrysene	3.27	0.167	mg/kg wet	3.333		98	40-140			
Dibenzo(a,h)Anthracene	2.63	0.167	mg/kg wet	3.333		79	40-140			
Fluoranthene	2.85	0.333	mg/kg wet	3.333		85	40-140			
Fluorene	3.02	0.333	mg/kg wet	3.333		90	40-140			
Indeno(1,2,3-cd)Pyrene	2.61	0.333	mg/kg wet	3.333		78	40-140			
Naphthalene	2.44	0.333	mg/kg wet	3.333		73	40-140			
Phenanthrene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Pyrene	3.47	0.333	mg/kg wet	3.333		104	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.32*		mg/kg wet	*3.333*		*70*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.42*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.38*		mg/kg wet	*3.333*		*71*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.09*		mg/kg wet	*3.333*		*93*	*30-130*			
LCS Dup										
2-Methylnaphthalene	2.64	0.333	mg/kg wet	3.333		79	40-140	5	30	
Acenaphthene	2.96	0.333	mg/kg wet	3.333		89	40-140	6	30	
Acenaphthylene	2.60	0.333	mg/kg wet	3.333		78	40-140	3	30	
Anthracene	3.11	0.333	mg/kg wet	3.333		93	40-140	2	30	
Benzo(a)anthracene	3.48	0.333	mg/kg wet	3.333		104	40-140	4	30	
Benzo(a)pyrene	3.48	0.167	mg/kg wet	3.333		105	40-140	6	30	
Benzo(b)fluoranthene	3.40	0.333	mg/kg wet	3.333		102	40-140	12	30	
Benzo(g,h,i)perylene	2.79	0.333	mg/kg wet	3.333		84	40-140	10	30	
Benzo(k)fluoranthene	3.74	0.333	mg/kg wet	3.333		112	40-140	4	30	
Chrysene	3.41	0.167	mg/kg wet	3.333		102	40-140	4	30	
Dibenzo(a,h)Anthracene	2.82	0.167	mg/kg wet	3.333		85	40-140	7	30	
Fluoranthene	2.86	0.333	mg/kg wet	3.333		86	40-140	0.4	30	
Fluorene	3.09	0.333	mg/kg wet	3.333		93	40-140	3	30	
Indeno(1,2,3-cd)Pyrene	2.86	0.333	mg/kg wet	3.333		86	40-140	9	30	
Naphthalene	2.57	0.333	mg/kg wet	3.333		77	40-140	5	30	
Phenanthrene	3.00	0.333	mg/kg wet	3.333		90	40-140	2	30	
Pyrene	3.64	0.333	mg/kg wet	3.333		109	40-140	5	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.30*		mg/kg wet	*3.333*		*69*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.43*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.45*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.20*		mg/kg wet	*3.333*		*96*	*30-130*			
Batch CB11821 - 3546										
Blank										
2-Methylnaphthalene	ND	0.333	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102200

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Polynuclear Aromatic Hydrocarbons										
Batch CB11821 - 3546										
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.52*		mg/kg wet	*3.333*		*76*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.51*		mg/kg wet	*3.333*		*75*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.58*		mg/kg wet	*3.333*		*77*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.25*		mg/kg wet	*3.333*		*97*	*30-130*			
LCS										
2-Methylnaphthalene	2.92	0.333	mg/kg wet	3.333		88	40-140			
Acenaphthene	3.17	0.333	mg/kg wet	3.333		95	40-140			
Acenaphthylene	2.82	0.333	mg/kg wet	3.333		85	40-140			
Anthracene	3.19	0.333	mg/kg wet	3.333		96	40-140			
Benzo(a)anthracene	3.46	0.333	mg/kg wet	3.333		104	40-140			
Benzo(a)pyrene	3.51	0.167	mg/kg wet	3.333		105	40-140			
Benzo(b)fluoranthene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Benzo(g,h,i)perylene	3.54	0.333	mg/kg wet	3.333		106	40-140			
Benzo(k)fluoranthene	3.98	0.333	mg/kg wet	3.333		119	40-140			
Chrysene	3.44	0.167	mg/kg wet	3.333		103	40-140			
Dibenzo(a,h)Anthracene	3.51	0.167	mg/kg wet	3.333		105	40-140			
Fluoranthene	3.01	0.333	mg/kg wet	3.333		90	40-140			
Fluorene	3.27	0.333	mg/kg wet	3.333		98	40-140			
Indeno(1,2,3-cd)Pyrene	3.53	0.333	mg/kg wet	3.333		106	40-140			
Naphthalene	2.78	0.333	mg/kg wet	3.333		83	40-140			
Phenanthrene	3.10	0.333	mg/kg wet	3.333		93	40-140			
Pyrene	3.70	0.333	mg/kg wet	3.333		111	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.63*		mg/kg wet	*3.333*		*79*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.66*		mg/kg wet	*3.333*		*80*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.70*		mg/kg wet	*3.333*		*81*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.12*		mg/kg wet	*3.333*		*94*	*30-130*			
LCS Dup										
2-Methylnaphthalene	2.83	0.333	mg/kg wet	3.333		85	40-140	3	30	
Acenaphthene	3.02	0.333	mg/kg wet	3.333		91	40-140	5	30	
Acenaphthylene	2.68	0.333	mg/kg wet	3.333		80	40-140	5	30	
Anthracene	3.07	0.333	mg/kg wet	3.333		92	40-140	4	30	
Benzo(a)anthracene	3.34	0.333	mg/kg wet	3.333		100	40-140	3	30	
Benzo(a)pyrene	3.47	0.167	mg/kg wet	3.333		104	40-140	1	30	
Benzo(b)fluoranthene	3.32	0.333	mg/kg wet	3.333		100	40-140	14	30	
Benzo(g,h,i)perylene	3.34	0.333	mg/kg wet	3.333		100	40-140	6	30	
Benzo(k)fluoranthene	3.29	0.333	mg/kg wet	3.333		99	40-140	19	30	
Chrysene	3.31	0.167	mg/kg wet	3.333		99	40-140	4	30	

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102200

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Polynuclear Aromatic Hydrocarbons										
Batch CB11821 - 3546										
Dibenzo(a,h)Anthracene	3.34	0.167	mg/kg wet	3.333		100	40-140	5	30	
Fluoranthene	2.98	0.333	mg/kg wet	3.333		90	40-140	0.9	30	
Fluorene	3.21	0.333	mg/kg wet	3.333		96	40-140	2	30	
Indeno(1,2,3-cd)Pyrene	3.32	0.333	mg/kg wet	3.333		100	40-140	6	30	
Naphthalene	2.69	0.333	mg/kg wet	3.333		81	40-140	4	30	
Phenanthrene	2.94	0.333	mg/kg wet	3.333		88	40-140	5	30	
Pyrene	3.42	0.333	mg/kg wet	3.333		103	40-140	8	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.45*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.53*		mg/kg wet	*3.333*		*76*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.57*		mg/kg wet	*3.333*		*77*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.88*		mg/kg wet	*3.333*		*86*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102200

Notes and Definitions

U	Analyte included in the analysis, but not detected
D	Diluted.
C+	Continuing Calibration recovery is above upper control limit (C+).
B+	Blank Spike recovery is above upper control limit (B+).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1102200

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002
http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424
http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002
http://www.nj.gov/dep/oqa/certlabs.htm

Pensylvania Potable and Non Potable Water, Solid and Hazardous Waste: 68-01752
http://files.dep.state.pa.us/RegionalResources/Labs/LabsPortalFiles/2009-0911_accredited_laboratories.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: Horsley & Witten
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 11020200
Date Project Due: 2/24/11
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present? *** No**
   Air No.:
2. Were Custody Seals Present? **No**
3. Were Custody Seals Intact? **N/A**
4. Is Radiation count < 100 CPM? **Yes**
5. Is a cooler present? **Yes**
   Cooler Temp: **4.4**
   Iced With: **Icepacks**
6. Was COC included with samples? **Yes**
7. Was COC signed and dated by client? **Yes**
8. Does the COC match the sample **Yes**
9. Is COC complete and correct? **Yes**
10. Are the samples properly preserved? **Yes**
11. Proper sample containers used? **Yes**
12. Any air bubbles in the VOA vials? **N/A**
13. Holding times exceeded? **No**
14. Sufficient sample volumes? **Yes**
15. Any Subcontracting needed? **No**
16. Are ESS labels on correct containers? **Yes** | **No**
17. Were samples received intact? **Yes** | **No**
    ESS Sample IDs: _____
    Sub Lab: _____
    Analysis: _____
    TAT: _____
18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?:_____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	4 oz Soil Jar	1	NP
2	Yes	4 oz Soil Jar	1	NP
3	Yes	4 oz Soil Jar	1	NP
4	Yes	4 oz Soil Jar	1	NP
5	Yes	4 oz Soil Jar	1	NP
6	Yes	4 oz Soil Jar	1	NP
7	Yes	4 oz Soil Jar	1	NP
8	Yes	4 oz Soil Jar	1	NP
9	Yes	4 oz Soil Jar	1	NP
10	Yes	4 oz Soil Jar	1	NP
11	Yes	4 oz Soil Jar	1	NP

Completed By: EO Date/Time: 2/17/11
Reviewed By: _____ Date/Time: 2/17/11

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Page 1 of 2 of 4

Turn Time: (X) Standard Other ____
If faster than 5 days, prior approval by laboratory is required # ____

State where samples were collected from: (MA) RI CT NH NJ NY ME Other ____

Is this project for any of the following: (MA-MCP) Navy USACE Other ____

Reporting Limits: S1

ESS LAB PROJECT ID: 1102200

Electronic Deliverable: Yes (X) No ____
Format: Excel (X) Access ____ PDF (X) Other ____

Co. Name	HORSLEY WITTEN
Project #	11024
Project Name (20 Char. or less)	BMA RISK
Contact Person	GARY HEDMAN
Address	90 ROUTE 6A
City	SANDWICH
State	MA
Zip	02563
PO#	
Telephone #	508-833-6600
Fax #	
Email Address	ghedman@

Circle and/or Write Required Analysis

ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	8260 VOA	624 524.2	8021 MTBE/BTEX	8015 GRO	VPH w/targets	8100 TPH	8015 DRO	EPH w/o PAHs	EPH w/PAHs	EPH 4 Diesel	8081 Pesticides	8082 PCB	608 Pesticides	608 PCB	8270 SVOA	625	PAH 8270	RCRA5	RCRA8	PP13	TAL23	TCLP-RCRA8	NBC7	MCP-METALS (13)	MCP-METALS (13) w/Hg	RCRA 8 METALS	PAHs			
1	2-16-2011	1400	X		S	LP 10	NP	1	G																										X	X			
2	↓	1530	↓		↓	MD 1	↓	↓	↓																										↓	↓			
3		1540				MD2																																	
4		1550				MD3																																	
5		1600				MD4																																	
6		1610				MD5																																	
7		1620				MD6																																	
8		1630				MD7																																	
9	↓	1640	↓		↓	MD8	↓	↓	↓																										↓	↓			
10	2-16-2011	1650	X		S	MD9	NP	1	G																										X	X			

Container Type: P-Poly (G-Glass) S-Sterile V-VOA | Matrix: (S-Soil) SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present ✓ Yes ___ No Internal Use Only

Seals Intact ___ Yes ___ No NA: ✓ ~~[ ] Pickup~~

Cooler Temp: 4.4°

[ ] Technicians ____

Preservation Code (1- NP) 2- HC1, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- ____

Sampled by: GH

Comments:

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	2-17 1300	[signature]	2/17/11 1303	[signature]	2/17/11 1607	[signature]	4/17/11 1600
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 B

ESS Laboratory

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www.esslaboratory.com

CHAIN OF CUSTODY

Page 4 of 4 (2 of 2)

Turn Time: (X) Standard Other ____
If faster than 5 days, prior approval by laboratory is required # ____

State where samples were collected from: (MA) RI CT NH NJ NY ME Other ____

Is this project for any of the following: (MA-MCP) Navy USACE Other ____

Reporting Limits: SI

ESS LAB PROJECT ID: 1102200

Electronic Deliverable: Yes (X) No ____
Format: Excel (X) Access ____ PDF (X) Other ____

Co. Name	HORSLEY WITTEN
Project #	11024
Project Name (20 Char. or less)	BMA RISK
Contact Person	GARY HEDMAN
Address	90 ROUTE 6A
City	SANDWICH
State	MA
Zip	02563
PO#	
Telephone #	508·833·6600
Fax #	
Email Address	ghedman@

Circle and/or Write Required Analysis

ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	8260 624 524.2 VOA	8021 MTBE/BTEX 8015 GRO VPH w/targets	8100 TPH 8015 DRO	EPH w/o PAHs EPH w/PAHs EPH 4 Diesel	8081 Pesticides 8082 PCB 608 Pesticides 608 PCB	8270 SVOA 625 PAH 8270	RCRA5 RCRA8 PP13 TAL23	TCLP-RCRA8 NBC7	MCP-METALS (13) MCP-METALS (13) w/Hg	RCRA 8 METALS	PAHS			
11	2-16-11	1700	X		S	MD 10	NP	1	G										X	X			

Container Type: P-Poly (G-Glass) S-Sterile V-VOA | Matrix: (S-Soil) SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present ___ Yes ___ No Internal Use Only

Seals Intact ___ Yes ___ No NA: — [~~] Pickup~~

Cooler Temp: 4.40 [ ] Technicians ____

Preservation Code (1- NP) 2- HC1, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- ____

Sampled by: GH

Comments:

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	2/17 1300	[signature]	2/17/11 1303	[signature]	2/17/11 1607	[signature]	2/17/11 1610
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 B

CERTIFICATE OF ANALYSIS

Gary Hedman
Horsley & Witten
90 Route 6A
Sandwich, MA 02563

RE: BMA Risk (11024)
ESS Laboratory Work Order Number: 1104118

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1104118

SAMPLE RECEIPT

The following samples were received on April 08, 2011 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has performed and reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for Metals and SVOA were analyzed for a subset of the required MCP list per the client's request.

Lab Number	SampleName	Matrix	Analysis
1104118-01	HW-1S	Ground Water	6010B, 7010, 7470A, 8270D SIM
1104118-02	HW-1D	Ground Water	6010B, 7010, 7470A, 8270D SIM
1104118-03	HW-2	Ground Water	6010B, 7010, 7470A, 8270D SIM
1104118-04	HW-3	Ground Water	6010B, 7010, 7470A, 8270D SIM
1104118-05	HW-4	Ground Water	6010B, 7010, 7470A, 8270D SIM

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1104118

PROJECT NARRATIVE

8270D(SIM) Polynuclear Aromatic Hydrocarbon
CUD0096-CCV1 **Calibration required quadratic regression (Q).**
Dibenzo(a,h)Anthracene (75% @ 70-130%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1104118

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1104118-01 through 1104118-05**

Matrices: (X) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

( ) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH CAM IV A	( ) 8081 Pesticides CAM V B	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 8270 SVOC CAM II B	( ) 7010 Metals CAM III C	( ) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) 8330 Explosives CAM VIII A	( ) TO-15 VOC CAM IX B
(X) 6010 Metals CAM III A	( ) 6020 Metals CAM III D	( ) 8082 PCB CAM V A	( ) 6860 Perchlorate CAM VIII B	( ) 9014 Total Cyanide/PAC CAM VI A	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	a. VPH, EPH, APH and TO-15 only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? ***Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*	Yes (X) No ( )*
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (X)*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard Date: April 19, 2011

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: HW-1S
Date Sampled: 04/07/11 12:00
Percent Solids: N/A

ESS Laboratory Work Order: 1104118
ESS Laboratory Sample ID: 1104118-01
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

MA - GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (2.5)	7010	10	1	JP	04/13/11 6:16	50	25	CD11128
Barium	ND (25)	6010B	2000	1	JP	04/13/11 0:05	50	25	CD11128
Cadmium	ND (2.5)	6010B	5	1	JP	04/13/11 0:05	50	25	CD11128
Chromium	ND (10)	6010B	100	1	JP	04/13/11 0:05	50	25	CD11128
Lead	ND (10)	6010B	15	1	JP	04/13/11 0:05	50	25	CD11128
Mercury	ND (0.20)	7470A	2	1	KJK	04/18/11 14:39	20	40	CD11512
Selenium	ND (25)	6010B	50	1	JP	04/13/11 0:05	50	25	CD11128
Silver	ND (5)	6010B	100	1	JP	04/13/11 0:05	50	25	CD11128

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: HW-1S
Date Sampled: 04/07/11 12:00
Percent Solids: N/A
Initial Volume: 970
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1104118
ESS Laboratory Sample ID: 1104118-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 4/13/11 18:15

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.21)	10	1	04/14/11 13:33	CUD0096	CD11327
Acenaphthene	ND (0.21)	20	1	04/14/11 13:33	CUD0096	CD11327
Acenaphthylene	ND (0.21)	30	1	04/14/11 13:33	CUD0096	CD11327
Anthracene	ND (0.21)	60	1	04/14/11 13:33	CUD0096	CD11327
Benzo(a)anthracene	**0.08** (0.05)	1	1	04/14/11 13:33	CUD0096	CD11327
Benzo(a)pyrene	**0.05** (0.05)	0.2	1	04/14/11 13:33	CUD0096	CD11327
Benzo(b)fluoranthene	**0.08** (0.05)	1	1	04/14/11 13:33	CUD0096	CD11327
Benzo(g,h,i)perylene	ND (0.21)	50	1	04/14/11 13:33	CUD0096	CD11327
Benzo(k)fluoranthene	ND (0.05)	1	1	04/14/11 13:33	CUD0096	CD11327
Chrysene	**0.09** (0.05)	2	1	04/14/11 13:33	CUD0096	CD11327
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	04/14/11 13:33	CUD0096	CD11327
Fluoranthene	ND (0.21)	90	1	04/14/11 13:33	CUD0096	CD11327
Fluorene	ND (0.21)	30	1	04/14/11 13:33	CUD0096	CD11327
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	04/14/11 13:33	CUD0096	CD11327
Naphthalene	ND (0.21)	140	1	04/14/11 13:33	CUD0096	CD11327
Phenanthrene	ND (0.21)	40	1	04/14/11 13:33	CUD0096	CD11327
Pyrene	ND (0.21)	80	1	04/14/11 13:33	CUD0096	CD11327

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*73 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*78 %*		*30-130*
Surrogate: Nitrobenzene-d5	*74 %*		*30-130*
Surrogate: p-Terphenyl-d14	*77 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: HW-1D
Date Sampled: 04/07/11 12:45
Percent Solids: N/A

ESS Laboratory Work Order: 1104118
ESS Laboratory Sample ID: 1104118-02
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

MA - GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (2.5)	7010	10	1	JP	04/13/11 6:21	50	25	CD11128
Barium	ND (25)	6010B	2000	1	JP	04/13/11 0:09	50	25	CD11128
Cadmium	ND (2.5)	6010B	5	1	JP	04/13/11 0:09	50	25	CD11128
Chromium	ND (10)	6010B	100	1	JP	04/13/11 0:09	50	25	CD11128
Lead	ND (10)	6010B	15	1	JP	04/13/11 0:09	50	25	CD11128
Mercury	ND (0.20)	7470A	2	1	KJK	04/18/11 14:46	20	40	CD11512
Selenium	ND (25)	6010B	50	1	JP	04/13/11 0:09	50	25	CD11128
Silver	ND (5)	6010B	100	1	JP	04/13/11 0:09	50	25	CD11128

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: HW-1D
Date Sampled: 04/07/11 12:45
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1104118
ESS Laboratory Sample ID: 1104118-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 4/13/11 18:15

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	04/14/11 14:16	CUD0096	CD11327
Acenaphthene	ND (0.20)	20	1	04/14/11 14:16	CUD0096	CD11327
Acenaphthylene	ND (0.20)	30	1	04/14/11 14:16	CUD0096	CD11327
Anthracene	ND (0.20)	60	1	04/14/11 14:16	CUD0096	CD11327
Benzo(a)anthracene	ND (0.05)	1	1	04/14/11 14:16	CUD0096	CD11327
Benzo(a)pyrene	ND (0.05)	0.2	1	04/14/11 14:16	CUD0096	CD11327
Benzo(b)fluoranthene	ND (0.05)	1	1	04/14/11 14:16	CUD0096	CD11327
Benzo(g,h,i)perylene	ND (0.20)	50	1	04/14/11 14:16	CUD0096	CD11327
Benzo(k)fluoranthene	ND (0.05)	1	1	04/14/11 14:16	CUD0096	CD11327
Chrysene	ND (0.05)	2	1	04/14/11 14:16	CUD0096	CD11327
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	04/14/11 14:16	CUD0096	CD11327
Fluoranthene	ND (0.20)	90	1	04/14/11 14:16	CUD0096	CD11327
Fluorene	ND (0.20)	30	1	04/14/11 14:16	CUD0096	CD11327
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	04/14/11 14:16	CUD0096	CD11327
Naphthalene	ND (0.20)	140	1	04/14/11 14:16	CUD0096	CD11327
Phenanthrene	ND (0.20)	40	1	04/14/11 14:16	CUD0096	CD11327
Pyrene	ND (0.20)	80	1	04/14/11 14:16	CUD0096	CD11327

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*55 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*60 %*		*30-130*
Surrogate: Nitrobenzene-d5	*52 %*		*30-130*
Surrogate: p-Terphenyl-d14	*78 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: HW-2
Date Sampled: 04/07/11 13:30
Percent Solids: N/A

ESS Laboratory Work Order: 1104118
ESS Laboratory Sample ID: 1104118-03
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

MA - GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (2.5)	7010	10	1	JP	04/13/11 6:27	50	25	CD11128
Barium	ND (25)	6010B	2000	1	JP	04/13/11 0:13	50	25	CD11128
Cadmium	ND (2.5)	6010B	5	1	JP	04/13/11 0:13	50	25	CD11128
Chromium	ND (10)	6010B	100	1	JP	04/13/11 0:13	50	25	CD11128
Lead	ND (10)	6010B	15	1	JP	04/13/11 0:13	50	25	CD11128
Mercury	ND (0.20)	7470A	2	1	KJK	04/18/11 14:49	20	40	CD11512
Selenium	ND (25)	6010B	50	1	JP	04/13/11 0:13	50	25	CD11128
Silver	ND (5)	6010B	100	1	JP	04/13/11 0:13	50	25	CD11128

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: HW-2
Date Sampled: 04/07/11 13:30
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1104118
ESS Laboratory Sample ID: 1104118-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 4/13/11 18:15

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	04/14/11 14:59	CUD0096	CD11327
Acenaphthene	ND (0.20)	20	1	04/14/11 14:59	CUD0096	CD11327
Acenaphthylene	ND (0.20)	30	1	04/14/11 14:59	CUD0096	CD11327
Anthracene	ND (0.20)	60	1	04/14/11 14:59	CUD0096	CD11327
Benzo(a)anthracene	ND (0.05)	1	1	04/14/11 14:59	CUD0096	CD11327
Benzo(a)pyrene	ND (0.05)	0.2	1	04/14/11 14:59	CUD0096	CD11327
Benzo(b)fluoranthene	ND (0.05)	1	1	04/14/11 14:59	CUD0096	CD11327
Benzo(g,h,i)perylene	ND (0.20)	50	1	04/14/11 14:59	CUD0096	CD11327
Benzo(k)fluoranthene	ND (0.05)	1	1	04/14/11 14:59	CUD0096	CD11327
Chrysene	ND (0.05)	2	1	04/14/11 14:59	CUD0096	CD11327
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	04/14/11 14:59	CUD0096	CD11327
Fluoranthene	ND (0.20)	90	1	04/14/11 14:59	CUD0096	CD11327
Fluorene	ND (0.20)	30	1	04/14/11 14:59	CUD0096	CD11327
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	04/14/11 14:59	CUD0096	CD11327
Naphthalene	ND (0.20)	140	1	04/14/11 14:59	CUD0096	CD11327
Phenanthrene	ND (0.20)	40	1	04/14/11 14:59	CUD0096	CD11327
Pyrene	ND (0.20)	80	1	04/14/11 14:59	CUD0096	CD11327

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*69 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*77 %*		*30-130*
Surrogate: Nitrobenzene-d5	*65 %*		*30-130*
Surrogate: p-Terphenyl-d14	*74 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: HW-3
Date Sampled: 04/07/11 14:15
Percent Solids: N/A

ESS Laboratory Work Order: 1104118
ESS Laboratory Sample ID: 1104118-04
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

			MA - GW1						
Analyte	**Results (MRL)**	**Method**	**Limit**	**DF**	**Analyst**	**Analyzed**	**I/V**	**F/V**	**Batch**
Arsenic	ND (2.5)	7010	10	1	JP	04/13/11 6:32	50	25	CD11128
Barium	**36** (25)	6010B	2000	1	JP	04/13/11 0:25	50	25	CD11128
Cadmium	ND (2.5)	6010B	5	1	JP	04/13/11 0:25	50	25	CD11128
Chromium	ND (10)	6010B	100	1	JP	04/13/11 0:25	50	25	CD11128
Lead	ND (10)	6010B	15	1	JP	04/13/11 0:25	50	25	CD11128
Mercury	ND (0.20)	7470A	2	1	KJK	04/18/11 14:51	20	40	CD11512
Selenium	ND (25)	6010B	50	1	JP	04/13/11 0:25	50	25	CD11128
Silver	ND (5)	6010B	100	1	JP	04/13/11 0:25	50	25	CD11128

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: HW-3
Date Sampled: 04/07/11 14:15
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1104118
ESS Laboratory Sample ID: 1104118-04
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 4/13/11 18:15

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	04/14/11 15:43	CUD0096	CD11327
Acenaphthene	ND (0.20)	20	1	04/14/11 15:43	CUD0096	CD11327
Acenaphthylene	ND (0.20)	30	1	04/14/11 15:43	CUD0096	CD11327
Anthracene	ND (0.20)	60	1	04/14/11 15:43	CUD0096	CD11327
Benzo(a)anthracene	ND (0.05)	1	1	04/14/11 15:43	CUD0096	CD11327
Benzo(a)pyrene	ND (0.05)	0.2	1	04/14/11 15:43	CUD0096	CD11327
Benzo(b)fluoranthene	ND (0.05)	1	1	04/14/11 15:43	CUD0096	CD11327
Benzo(g,h,i)perylene	ND (0.20)	50	1	04/14/11 15:43	CUD0096	CD11327
Benzo(k)fluoranthene	ND (0.05)	1	1	04/14/11 15:43	CUD0096	CD11327
Chrysene	ND (0.05)	2	1	04/14/11 15:43	CUD0096	CD11327
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	04/14/11 15:43	CUD0096	CD11327
Fluoranthene	ND (0.20)	90	1	04/14/11 15:43	CUD0096	CD11327
Fluorene	ND (0.20)	30	1	04/14/11 15:43	CUD0096	CD11327
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	04/14/11 15:43	CUD0096	CD11327
Naphthalene	ND (0.20)	140	1	04/14/11 15:43	CUD0096	CD11327
Phenanthrene	ND (0.20)	40	1	04/14/11 15:43	CUD0096	CD11327
Pyrene	ND (0.20)	80	1	04/14/11 15:43	CUD0096	CD11327

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*75 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*80 %*		*30-130*
Surrogate: Nitrobenzene-d5	*70 %*		*30-130*
Surrogate: p-Terphenyl-d14	*78 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: HW-4
Date Sampled: 04/07/11 15:00
Percent Solids: N/A

ESS Laboratory Work Order: 1104118
ESS Laboratory Sample ID: 1104118-05
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

			MA - GW1						
Analyte	**Results (MRL)**	**Method**	**Limit**	**DF**	**Analyst**	**Analyzed**	**I/V**	**F/V**	**Batch**
Arsenic	ND (2.5)	7010	10	1	JP	04/13/11 6:38	50	25	CD11128
Barium	ND (25)	6010B	2000	1	JP	04/13/11 0:29	50	25	CD11128
Cadmium	ND (2.5)	6010B	5	1	JP	04/13/11 0:29	50	25	CD11128
Chromium	ND (10)	6010B	100	1	JP	04/13/11 0:29	50	25	CD11128
Lead	ND (10)	6010B	15	1	JP	04/13/11 0:29	50	25	CD11128
Mercury	ND (0.20)	7470A	2	1	KJK	04/18/11 14:54	20	40	CD11512
Selenium	ND (25)	6010B	50	1	JP	04/13/11 0:29	50	25	CD11128
Silver	ND (5)	6010B	100	1	JP	04/13/11 0:29	50	25	CD11128

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk
Client Sample ID: HW-4
Date Sampled: 04/07/11 15:00
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1104118
ESS Laboratory Sample ID: 1104118-05
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 4/13/11 18:15

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	04/14/11 16:26	CUD0096	CD11327
Acenaphthene	ND (0.20)	20	1	04/14/11 16:26	CUD0096	CD11327
Acenaphthylene	ND (0.20)	30	1	04/14/11 16:26	CUD0096	CD11327
Anthracene	ND (0.20)	60	1	04/14/11 16:26	CUD0096	CD11327
Benzo(a)anthracene	ND (0.05)	1	1	04/14/11 16:26	CUD0096	CD11327
Benzo(a)pyrene	ND (0.05)	0.2	1	04/14/11 16:26	CUD0096	CD11327
Benzo(b)fluoranthene	ND (0.05)	1	1	04/14/11 16:26	CUD0096	CD11327
Benzo(g,h,i)perylene	ND (0.20)	50	1	04/14/11 16:26	CUD0096	CD11327
Benzo(k)fluoranthene	ND (0.05)	1	1	04/14/11 16:26	CUD0096	CD11327
Chrysene	ND (0.05)	2	1	04/14/11 16:26	CUD0096	CD11327
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	04/14/11 16:26	CUD0096	CD11327
Fluoranthene	ND (0.20)	90	1	04/14/11 16:26	CUD0096	CD11327
Fluorene	ND (0.20)	30	1	04/14/11 16:26	CUD0096	CD11327
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	04/14/11 16:26	CUD0096	CD11327
Naphthalene	ND (0.20)	140	1	04/14/11 16:26	CUD0096	CD11327
Phenanthrene	ND (0.20)	40	1	04/14/11 16:26	CUD0096	CD11327
Pyrene	ND (0.20)	80	1	04/14/11 16:26	CUD0096	CD11327

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*64 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*72 %*		*30-130*
Surrogate: Nitrobenzene-d5	*54 %*		*30-130*
Surrogate: p-Terphenyl-d14	*82 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1104118

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
3005A/3020A/6000/7000 Dissolved Metals										
Batch CD11128 - 3005A										
Blank										
Arsenic	ND	2.5	ug/L							
Barium	ND	25	ug/L							
Cadmium	ND	2.5	ug/L							
Chromium	ND	10	ug/L							
Lead	ND	10	ug/L							
Selenium	ND	25	ug/L							
Silver	ND	5	ug/L							
LCS										
Barium	251	25	ug/L	250.0		100	80-120			
Cadmium	118	2.5	ug/L	125.0		94	80-120			
Chromium	246	10	ug/L	250.0		98	80-120			
Lead	246	10	ug/L	250.0		99	80-120			
Selenium	505	25	ug/L	500.0		101	80-120			
Silver	125	5	ug/L	125.0		100	80-120			
LCS										
Arsenic	12.0	2.5	ug/L	10.00		120	80-120			
LCS Dup										
Barium	249	25	ug/L	250.0		100	80-120	0.7	20	
Cadmium	115	2.5	ug/L	125.0		92	80-120	2	20	
Chromium	245	10	ug/L	250.0		98	80-120	0.5	20	
Lead	243	10	ug/L	250.0		97	80-120	1	20	
Selenium	496	25	ug/L	500.0		99	80-120	2	20	
Silver	122	5	ug/L	125.0		98	80-120	2	20	
LCS Dup										
Arsenic	10.7	2.5	ug/L	10.00		107	80-120	12	20	
Batch CD11512 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.65	0.20	ug/L	6.000		94	80-120			
LCS Dup										
Mercury	5.69	0.20	ug/L	6.000		95	80-120	0.6	20	
8270D(SIM) Polynuclear Aromatic Hydrocarbon										
Batch CD11327 - 3510C										
Blank										
2-Methylnaphthalene	ND	0.20	ug/L							
Acenaphthene	ND	0.20	ug/L							
Acenaphthylene	ND	0.20	ug/L							
Anthracene	ND	0.20	ug/L							
Benzo(a)anthracene	ND	0.05	ug/L							
Benzo(a)pyrene	ND	0.05	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1104118

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbon										
Batch CD11327 - 3510C										
Benzo(b)fluoranthene	ND	0.05	ug/L							
Benzo(g,h,i)perylene	ND	0.20	ug/L							
Benzo(k)fluoranthene	ND	0.05	ug/L							
Chrysene	ND	0.05	ug/L							
Dibenzo(a,h)Anthracene	ND	0.05	ug/L							
Fluoranthene	ND	0.20	ug/L							
Fluorene	ND	0.20	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	0.05	ug/L							
Naphthalene	ND	0.20	ug/L							
Phenanthrene	ND	0.20	ug/L							
Pyrene	ND	0.20	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.410*		ug/L	*0.6250*		*66*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.442*		ug/L	*0.6250*		*71*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.395*		ug/L	*0.6250*		*63*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.498*		ug/L	*0.6250*		*80*	*30-130*			
LCS										
2-Methylnaphthalene	0.348	0.20	ug/L	0.5000		70	40-140			
Acenaphthene	0.382	0.20	ug/L	0.5000		76	40-140			
Acenaphthylene	0.325	0.20	ug/L	0.5000		65	40-140			
Anthracene	0.415	0.20	ug/L	0.5000		83	40-140			
Benzo(a)anthracene	0.412	0.05	ug/L	0.5000		82	40-140			
Benzo(a)pyrene	0.402	0.05	ug/L	0.5000		80	40-140			
Benzo(b)fluoranthene	0.400	0.05	ug/L	0.5000		80	40-140			
Benzo(g,h,i)perylene	0.358	0.20	ug/L	0.5000		72	40-140			
Benzo(k)fluoranthene	0.435	0.05	ug/L	0.5000		87	40-140			
Chrysene	0.432	0.05	ug/L	0.5000		86	40-140			
Dibenzo(a,h)Anthracene	0.338	0.05	ug/L	0.5000		68	40-140			
Fluoranthene	0.438	0.20	ug/L	0.5000		88	40-140			
Fluorene	0.410	0.20	ug/L	0.5000		82	40-140			
Indeno(1,2,3-cd)Pyrene	0.368	0.05	ug/L	0.5000		74	40-140			
Naphthalene	0.370	0.20	ug/L	0.5000		74	40-140			
Phenanthrene	0.418	0.20	ug/L	0.5000		84	40-140			
Pyrene	0.458	0.20	ug/L	0.5000		92	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.395*		ug/L	*0.6250*		*63*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.448*		ug/L	*0.6250*		*72*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.418*		ug/L	*0.6250*		*67*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.512*		ug/L	*0.6250*		*82*	*30-130*			
LCS Dup										
2-Methylnaphthalene	0.312	0.20	ug/L	0.5000		62	40-140	11	20	
Acenaphthene	0.352	0.20	ug/L	0.5000		70	40-140	8	20	
Acenaphthylene	0.298	0.20	ug/L	0.5000		60	40-140	9	20	
Anthracene	0.388	0.20	ug/L	0.5000		78	40-140	7	20	
Benzo(a)anthracene	0.368	0.05	ug/L	0.5000		74	40-140	12	20	
Benzo(a)pyrene	0.380	0.05	ug/L	0.5000		76	40-140	6	20	
Benzo(b)fluoranthene	0.365	0.05	ug/L	0.5000		73	40-140	9	20	

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1104118

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbon										
Batch CD11327 - 3510C										
Benzo(g,h,i)perylene	0.350	0.20	ug/L	0.5000		70	40-140	2	20	
Benzo(k)fluoranthene	0.412	0.05	ug/L	0.5000		82	40-140	5	20	
Chrysene	0.398	0.05	ug/L	0.5000		80	40-140	8	20	
Dibenzo(a,h)Anthracene	0.295	0.05	ug/L	0.5000		59	40-140	13	20	
Fluoranthene	0.400	0.20	ug/L	0.5000		80	40-140	9	20	
Fluorene	0.378	0.20	ug/L	0.5000		76	40-140	8	20	
Indeno(1,2,3-cd)Pyrene	0.330	0.05	ug/L	0.5000		66	40-140	11	20	
Naphthalene	0.350	0.20	ug/L	0.5000		70	40-140	6	20	
Phenanthrene	0.392	0.20	ug/L	0.5000		78	40-140	6	20	
Pyrene	0.408	0.20	ug/L	0.5000		82	40-140	12	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.372*		ug/L	*0.6250*		*60*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.392*		ug/L	*0.6250*		*63*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.390*		ug/L	*0.6250*		*62*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.450*		ug/L	*0.6250*		*72*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1104118

Notes and Definitions

U	Analyte included in the analysis, but not detected
Q	Calibration required quadratic regression (Q).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: BMA Risk

ESS Laboratory Work Order: 1104118

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002
http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424
http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002
http://www.nj.gov/dep/oqa/certlabs.htm

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time: ✓ Standard Other ____
If faster than 5 days, prior approval by laboratory is required # ____
State where samples were collected from: MA RI CT NH NJ NY ME Other ____
Is this project for any of the following: MA-MCP Navy USACE Other ____

Reporting Limits: GW-1
ESS LAB PROJECT ID: 110418
Electronic Deliverable ___ Yes ___ No
Format: Excel__ Access__ PDF__ Other____

Co. Name	Project #	Project Name (20 Char. or less)
Horsley Witten Group	11024	BMA Risk Assessment

Contact Person	Address
Gary Hedman	90 Rte 6A Sandwich

City	State	Zip	PO#
MA		02563	

Telephone #	Fax #	Email Address
508 833 6600	508 833 3150	

ESS LAB Sample#	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	PAHs	dissolved RCRA 8	Write Required Analysis
01	4/7/11	12:00 pm		X	GW	HW-1S		3	AP	X	X	
02	4/7/11	12:45 pm		X	GW	HW-1D		3	AP	X	X	
03	4/7/11	1:30 pm		X	GW	HW-2		3	AP	X	X	
04	4/7/11	2:15 pm		X	GW	HW-3		3	AP	X	X	
05	4/7/11	3:00 pm		X	GW	HW-4		3	AP	X	X	

Container Type: P-Poly, G-Glass S-Sterile V-VOA | Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present: X Yes ___ No
Seals Intact: ___ Yes ___ No NA: X
Cooler Temp: 4.7 ice

Internal Use Only
[ ] Pickup
[ ] Technicians ____

Preservation Code: 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- ____

Sampled by: CA

Comments: * dissolved RCRA 8 were filtered in the field by CA on 4/7/11

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	4/8/11 15:45		4/8/11 15:45		4/8/11 17:00		4/8/11 17:15
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

CERTIFICATE OF ANALYSIS

Gary Hedman
Horsley & Witten
90 Route 6A
Sandwich, MA 02563

RE: Barnstable Airport (11024)
ESS Laboratory Work Order Number: 1105147

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1105147

SAMPLE RECEIPT

The following samples were received on May 13, 2011 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has performed and reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for SVOA were analyzed for a subset of the required MCP list per the client's request.

Lab Number	SampleName	Matrix	Analysis
1105147-01	HW-1S	Ground Water	8270D SIM

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1105147

PROJECT NARRATIVE

8270D(SIM) Polynuclear Aromatic Hydrocarbon

CE11726-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Acenaphthene (24%), Acenaphthylene (23%), Benzo(a)anthracene (24%), Chrysene (24%), Fluoranthene (23%), Fluorene (24%), Phenanthrene (22%), Pyrene (28%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1105147

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1105147-01**

Matrices: (X) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

( ) 8260 VOC CAM II A	( ) 7470/7471 Hg CAM III B	( ) MassDEP VPH CAM IV A	( ) 8081 Pesticides CAM V B	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 8270 SVOC CAM II B	( ) 7010 Metals CAM III C	( ) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) 8330 Explosives CAM VIII A	( ) TO-15 VOC CAM IX B
( ) 6010 Metals CAM III A	( ) 6020 Metals CAM III D	( ) 8082 PCB CAM V A	( ) 6860 Perchlorate CAM VIII B	( ) 9014 Total Cyanide/PAC CAM VI A	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	a. VPH, EPH, APH and TO-15 only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? ***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**	Yes (X) No ( )*
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (X)*

All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard

Date: May 20, 2011

Printed Name: Laurel Stoddard

Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-1S
Date Sampled: 05/12/11 12:30
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1105147
ESS Laboratory Sample ID: 1105147-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 5/17/11 17:30

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	05/18/11 16:59	CUE0100	CE11726
Acenaphthene	ND (0.20)	20	1	05/18/11 16:59	CUE0100	CE11726
Acenaphthylene	ND (0.20)	30	1	05/18/11 16:59	CUE0100	CE11726
Anthracene	ND (0.20)	60	1	05/18/11 16:59	CUE0100	CE11726
Benzo(a)anthracene	ND (0.05)	1	1	05/18/11 16:59	CUE0100	CE11726
Benzo(a)pyrene	ND (0.05)	0.2	1	05/18/11 16:59	CUE0100	CE11726
Benzo(b)fluoranthene	ND (0.05)	1	1	05/18/11 16:59	CUE0100	CE11726
Benzo(g,h,i)perylene	ND (0.20)	50	1	05/18/11 16:59	CUE0100	CE11726
Benzo(k)fluoranthene	ND (0.05)	1	1	05/18/11 16:59	CUE0100	CE11726
Chrysene	ND (0.05)	2	1	05/18/11 16:59	CUE0100	CE11726
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	05/18/11 16:59	CUE0100	CE11726
Fluoranthene	ND (0.20)	90	1	05/18/11 16:59	CUE0100	CE11726
Fluorene	ND (0.20)	30	1	05/18/11 16:59	CUE0100	CE11726
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	05/18/11 16:59	CUE0100	CE11726
Naphthalene	ND (0.20)	140	1	05/18/11 16:59	CUE0100	CE11726
Phenanthrene	ND (0.20)	40	1	05/18/11 16:59	CUE0100	CE11726
Pyrene	ND (0.20)	80	1	05/18/11 16:59	CUE0100	CE11726

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*54 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*62 %*		*30-130*
Surrogate: Nitrobenzene-d5	*67 %*		*30-130*
Surrogate: p-Terphenyl-d14	*72 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1105147

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbon										
Batch CE11726 - 3510C										
Blank										
2-Methylnaphthalene	ND	0.20	ug/L							
Acenaphthene	ND	0.20	ug/L							
Acenaphthylene	ND	0.20	ug/L							
Anthracene	ND	0.20	ug/L							
Benzo(a)anthracene	ND	0.05	ug/L							
Benzo(a)pyrene	ND	0.05	ug/L							
Benzo(b)fluoranthene	ND	0.05	ug/L							
Benzo(g,h,i)perylene	ND	0.20	ug/L							
Benzo(k)fluoranthene	ND	0.05	ug/L							
Chrysene	ND	0.05	ug/L							
Dibenzo(a,h)Anthracene	ND	0.05	ug/L							
Fluoranthene	ND	0.20	ug/L							
Fluorene	ND	0.20	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	0.05	ug/L							
Naphthalene	ND	0.20	ug/L							
Phenanthrene	ND	0.20	ug/L							
Pyrene	ND	0.20	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.285*		ug/L	*0.6250*		*46*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.320*		ug/L	*0.6250*		*51*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.348*		ug/L	*0.6250*		*56*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.335*		ug/L	*0.6250*		*54*	*30-130*			
LCS										
2-Methylnaphthalene	0.302	0.20	ug/L	0.5000		60	40-140			
Acenaphthene	0.338	0.20	ug/L	0.5000		68	40-140			
Acenaphthylene	0.282	0.20	ug/L	0.5000		56	40-140			
Anthracene	0.360	0.20	ug/L	0.5000		72	40-140			
Benzo(a)anthracene	0.385	0.05	ug/L	0.5000		77	40-140			
Benzo(a)pyrene	0.430	0.05	ug/L	0.5000		86	40-140			
Benzo(b)fluoranthene	0.472	0.05	ug/L	0.5000		94	40-140			
Benzo(g,h,i)perylene	0.410	0.20	ug/L	0.5000		82	40-140			
Benzo(k)fluoranthene	0.485	0.05	ug/L	0.5000		97	40-140			
Chrysene	0.418	0.05	ug/L	0.5000		84	40-140			
Dibenzo(a,h)Anthracene	0.402	0.05	ug/L	0.5000		80	40-140			
Fluoranthene	0.352	0.20	ug/L	0.5000		70	40-140			
Fluorene	0.358	0.20	ug/L	0.5000		72	40-140			
Indeno(1,2,3-cd)Pyrene	0.415	0.05	ug/L	0.5000		83	40-140			
Naphthalene	0.325	0.20	ug/L	0.5000		65	40-140			
Phenanthrene	0.382	0.20	ug/L	0.5000		76	40-140			
Pyrene	0.425	0.20	ug/L	0.5000		85	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.312*		ug/L	*0.6250*		*50*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.348*		ug/L	*0.6250*		*56*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.380*		ug/L	*0.6250*		*61*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.352*		ug/L	*0.6250*		*56*	*30-130*			
LCS Dup										

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1105147

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbon										
Batch CE11726 - 3510C										
2-Methylnaphthalene	0.365	0.20	ug/L	0.5000		73	40-140	19	20	
Acenaphthene	0.430	0.20	ug/L	0.5000		86	40-140	24	20	D+
Acenaphthylene	0.355	0.20	ug/L	0.5000		71	40-140	23	20	D+
Anthracene	0.435	0.20	ug/L	0.5000		87	40-140	19	20	
Benzo(a)anthracene	0.490	0.05	ug/L	0.5000		98	40-140	24	20	D+
Benzo(a)pyrene	0.528	0.05	ug/L	0.5000		106	40-140	20	20	
Benzo(b)fluoranthene	0.518	0.05	ug/L	0.5000		104	40-140	9	20	
Benzo(g,h,i)perylene	0.452	0.20	ug/L	0.5000		90	40-140	10	20	
Benzo(k)fluoranthene	0.590	0.05	ug/L	0.5000		118	40-140	20	20	
Chrysene	0.530	0.05	ug/L	0.5000		106	40-140	24	20	D+
Dibenzo(a,h)Anthracene	0.450	0.05	ug/L	0.5000		90	40-140	11	20	
Fluoranthene	0.445	0.20	ug/L	0.5000		89	40-140	23	20	D+
Fluorene	0.455	0.20	ug/L	0.5000		91	40-140	24	20	D+
Indeno(1,2,3-cd)Pyrene	0.478	0.05	ug/L	0.5000		96	40-140	14	20	
Naphthalene	0.398	0.20	ug/L	0.5000		80	40-140	20	20	
Phenanthrene	0.478	0.20	ug/L	0.5000		96	40-140	22	20	D+
Pyrene	0.565	0.20	ug/L	0.5000		113	40-140	28	20	D+
Surrogate: 1,2-Dichlorobenzene-d4	*0.370*		ug/L	*0.6250*		*59*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.430*		ug/L	*0.6250*		*69*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.488*		ug/L	*0.6250*		*78*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.465*		ug/L	*0.6250*		*74*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport ESS Laboratory Work Order: 1105147

Notes and Definitions

U	Analyte included in the analysis, but not detected
D+	Relative percent difference for duplicate is outside of criteria (D+).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1105147

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002
http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424
http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002
http://www.nj.gov/dep/oqa/certlabs.htm

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: Horsley & Witten
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 11050147
Date Project Due: 5/20/11
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: **2.8**		16. Are ESS labels on correct containers?	Yes No
Iced With: **Icepacks**		17. Were samples received intact?	Yes No
6. Was COC included with samples?	Yes	ESS Sample IDs:	_____
7. Was COC signed and dated by client?	Yes	Sub Lab:	_____
8. Does the COC match the sample	Yes	Analysis:	_____
9. Is COC complete and correct?	Yes	TAT:	_____

18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?:_____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	1 L Glass	3	NP

Completed By: MK Date/Time: 5/13/11
Reviewed By: [illegible] Date/Time: 5/13/11

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time: ✓ Standard Other ____
If faster than 5 days, prior approval by laboratory is required # ____

State where samples were collected from:
MA RI CT NH NJ NY ME Other ____

Is this project for any of the following:
MA-MCP Navy USACE Other ____

Reporting Limits: GW-1

ESS LAB PROJECT ID: 1105147

Electronic Deliverable ___ Yes ___ No
Format: Excel__ Access__ PDF__ Other____

Co. Name	Project #	Project Name (20 Char. or less)
Horsley Witten Group	11024	Barnstable Airport

Contact Person	Address
Gary Hedman	90 Route 6A

City	State	Zip	PO#
Sandwich	MA	02563	

Telephone #	Fax #	Email Address
508-833-6600	508-833-3150	

ESS LAB Sample#	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	VPH (8270)														
01	5/12/11	12:30		X	GW	HW-1S		3	A	X														

Container Type: P-Poly G-Glass S-Sterile V-VOA | Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present ✓ Yes ___ No
Seals Intact ___ Yes ___ No NA: ✓
Cooler Temp 2.8°C

Internal Use Only
[✓] Pickup
[ ] Technicians ____

Preservation Code: 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- ____

Sampled by: CA

Comments:

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	5/12/11 3:55	[signature]	5/12/11 3:55				
[signature]	5/13/11 16:40	[signature]	5/13/11 10:40	[signature]	5/13/11 16:55	[signature]	5/13/11 1655

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

CERTIFICATE OF ANALYSIS

Gary Hedman
Horsley & Witten
90 Route 6A
Sandwich, MA 02563

RE: Barnstable Airport (11024)
ESS Laboratory Work Order Number: 1108226

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1108226

SAMPLE RECEIPT

The following samples were received on August 17, 2011 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has performed and reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for Metals and SVOA were analyzed for a subset of the required MCP list per the client's request.

Lab Number	SampleName	Matrix	Analysis
1108226-01	HW-MW-1S	Ground Water	6010B, 7010, 7470A, 8270D SIM
1108226-02	HW-MW-1D	Ground Water	6010B, 7010, 7470A, 8270D SIM
1108226-03	HW-MW-2	Ground Water	6010B, 7010, 7470A, 8270D SIM
1108226-04	HW-MW-3	Ground Water	6010B, 7010, 7470A, 8270D SIM
1108226-05	HW-MW-4	Ground Water	6010B, 7010, 7470A, 8270D SIM

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1108226

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1108226

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1108226-01 through 1108226-05**

Matrices: (X) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

( ) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH CAM IV A	( ) 8081 Pesticides CAM V B	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A	
(X) 8270 SVOC CAM II B	(X) 7010 Metals CAM III C	( ) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) 8330 Explosives CAM VIII A	( ) TO-15 VOC CAM IX B	
(X) 6010 Metals CAM III A	( ) 6020 Metals CAM III D	( ) 8082 PCB CAM V A	( ) 6860 Perchlorate CAM VIII B	( ) 9014 Total Cyanide/PAC CAM VI A		

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	a. VPH, EPH, APH and TO-15 only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? ***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**	Yes (X) No ( )*
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes (X) No ( )*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (X)*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ Date: August 26, 2011

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-1S
Date Sampled: 08/16/11 12:00
Percent Solids: N/A

ESS Laboratory Work Order: 1108226
ESS Laboratory Sample ID: 1108226-01
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

			MA - GW1						
Analyte	**Results (MRL)**	**Method**	**Limit**	**DF**	**Analyst**	**Analyzed**	**I/V**	**F/V**	**Batch**
Arsenic	ND (2.5)	7010	10	1	SVD	08/24/11 21:13	50	25	CH11817
Barium	ND (25)	6010B	2000	1	SVD	08/22/11 21:13	50	25	CH11817
Cadmium	ND (2.5)	6010B	5	1	SVD	08/22/11 21:13	50	25	CH11817
Chromium	ND (10)	6010B	100	1	SVD	08/22/11 21:13	50	25	CH11817
Lead	ND (10)	6010B	15	1	SVD	08/22/11 21:13	50	25	CH11817
Mercury	ND (0.20)	7470A	2	1	JP	08/25/11 16:17	20	40	CH12512
Selenium	ND (25)	6010B	50	1	SVD	08/22/11 21:13	50	25	CH11817
Silver	ND (5)	6010B	100	1	SVD	08/22/11 21:13	50	25	CH11817

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-1S
Date Sampled: 08/16/11 12:00
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1108226
ESS Laboratory Sample ID: 1108226-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 8/22/11 14:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	08/23/11 1:42	CUH0143	CH12213
Acenaphthene	ND (0.20)	20	1	08/23/11 1:42	CUH0143	CH12213
Acenaphthylene	ND (0.20)	30	1	08/23/11 1:42	CUH0143	CH12213
Anthracene	ND (0.20)	60	1	08/23/11 1:42	CUH0143	CH12213
Benzo(a)anthracene	ND (0.05)	1	1	08/23/11 1:42	CUH0143	CH12213
Benzo(a)pyrene	ND (0.05)	0.2	1	08/23/11 1:42	CUH0143	CH12213
Benzo(b)fluoranthene	ND (0.05)	1	1	08/23/11 1:42	CUH0143	CH12213
Benzo(g,h,i)perylene	ND (0.20)	50	1	08/23/11 1:42	CUH0143	CH12213
Benzo(k)fluoranthene	ND (0.05)	1	1	08/23/11 1:42	CUH0143	CH12213
Chrysene	ND (0.05)	2	1	08/23/11 1:42	CUH0143	CH12213
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	08/23/11 1:42	CUH0143	CH12213
Fluoranthene	ND (0.20)	90	1	08/23/11 1:42	CUH0143	CH12213
Fluorene	ND (0.20)	30	1	08/23/11 1:42	CUH0143	CH12213
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	08/23/11 1:42	CUH0143	CH12213
Naphthalene	ND (0.20)	140	1	08/23/11 1:42	CUH0143	CH12213
Phenanthrene	ND (0.20)	40	1	08/23/11 1:42	CUH0143	CH12213
Pyrene	ND (0.20)	80	1	08/23/11 1:42	CUH0143	CH12213

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*56 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*63 %*		*30-130*
Surrogate: Nitrobenzene-d5	*64 %*		*30-130*
Surrogate: p-Terphenyl-d14	*65 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-1D
Date Sampled: 08/16/11 12:50
Percent Solids: N/A

ESS Laboratory Work Order: 1108226
ESS Laboratory Sample ID: 1108226-02
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

			MA - GW1						
Analyte	**Results (MRL)**	**Method**	**Limit**	**DF**	**Analyst**	**Analyzed**	**I/V**	**F/V**	**Batch**
Arsenic	ND (2.5)	7010	10	1	SVD	08/24/11 21:19	50	25	CH11817
Barium	ND (25)	6010B	2000	1	SVD	08/22/11 21:17	50	25	CH11817
Cadmium	ND (2.5)	6010B	5	1	SVD	08/22/11 21:17	50	25	CH11817
Chromium	ND (10)	6010B	100	1	SVD	08/22/11 21:17	50	25	CH11817
Lead	ND (10)	6010B	15	1	SVD	08/22/11 21:17	50	25	CH11817
Mercury	ND (0.20)	7470A	2	1	JP	08/25/11 16:20	20	40	CH12512
Selenium	ND (25)	6010B	50	1	SVD	08/22/11 21:17	50	25	CH11817
Silver	ND (5)	6010B	100	1	SVD	08/22/11 21:17	50	25	CH11817

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-1D
Date Sampled: 08/16/11 12:50
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1108226
ESS Laboratory Sample ID: 1108226-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 8/22/11 14:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	08/23/11 2:28	CUH0143	CH12213
Acenaphthene	ND (0.20)	20	1	08/23/11 2:28	CUH0143	CH12213
Acenaphthylene	ND (0.20)	30	1	08/23/11 2:28	CUH0143	CH12213
Anthracene	ND (0.20)	60	1	08/23/11 2:28	CUH0143	CH12213
Benzo(a)anthracene	ND (0.05)	1	1	08/23/11 2:28	CUH0143	CH12213
Benzo(a)pyrene	ND (0.05)	0.2	1	08/23/11 2:28	CUH0143	CH12213
Benzo(b)fluoranthene	ND (0.05)	1	1	08/23/11 2:28	CUH0143	CH12213
Benzo(g,h,i)perylene	ND (0.20)	50	1	08/23/11 2:28	CUH0143	CH12213
Benzo(k)fluoranthene	ND (0.05)	1	1	08/23/11 2:28	CUH0143	CH12213
Chrysene	ND (0.05)	2	1	08/23/11 2:28	CUH0143	CH12213
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	08/23/11 2:28	CUH0143	CH12213
Fluoranthene	ND (0.20)	90	1	08/23/11 2:28	CUH0143	CH12213
Fluorene	ND (0.20)	30	1	08/23/11 2:28	CUH0143	CH12213
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	08/23/11 2:28	CUH0143	CH12213
Naphthalene	ND (0.20)	140	1	08/23/11 2:28	CUH0143	CH12213
Phenanthrene	ND (0.20)	40	1	08/23/11 2:28	CUH0143	CH12213
Pyrene	ND (0.20)	80	1	08/23/11 2:28	CUH0143	CH12213

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*62 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*69 %*		*30-130*
Surrogate: Nitrobenzene-d5	*71 %*		*30-130*
Surrogate: p-Terphenyl-d14	*75 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-2
Date Sampled: 08/16/11 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1108226
ESS Laboratory Sample ID: 1108226-03
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

			MA - GW1						
Analyte	**Results (MRL)**	**Method**	**Limit**	**DF**	**Analyst**	**Analyzed**	**I/V**	**F/V**	**Batch**
Arsenic	ND (2.5)	7010	10	1	SVD	08/24/11 21:25	50	25	CH11817
Barium	ND (25)	6010B	2000	1	SVD	08/22/11 21:21	50	25	CH11817
Cadmium	ND (2.5)	6010B	5	1	SVD	08/22/11 21:21	50	25	CH11817
Chromium	ND (10)	6010B	100	1	SVD	08/22/11 21:21	50	25	CH11817
Lead	ND (10)	6010B	15	1	SVD	08/22/11 21:21	50	25	CH11817
Mercury	ND (0.20)	7470A	2	1	JP	08/25/11 16:22	20	40	CH12512
Selenium	ND (25)	6010B	50	1	SVD	08/22/11 21:21	50	25	CH11817
Silver	ND (5)	6010B	100	1	SVD	08/22/11 21:21	50	25	CH11817

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-2
Date Sampled: 08/16/11 13:45
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1108226
ESS Laboratory Sample ID: 1108226-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 8/22/11 14:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	08/23/11 3:14	CUH0143	CH12213
Acenaphthene	ND (0.20)	20	1	08/23/11 3:14	CUH0143	CH12213
Acenaphthylene	ND (0.20)	30	1	08/23/11 3:14	CUH0143	CH12213
Anthracene	ND (0.20)	60	1	08/23/11 3:14	CUH0143	CH12213
Benzo(a)anthracene	ND (0.05)	1	1	08/23/11 3:14	CUH0143	CH12213
Benzo(a)pyrene	ND (0.05)	0.2	1	08/23/11 3:14	CUH0143	CH12213
Benzo(b)fluoranthene	ND (0.05)	1	1	08/23/11 3:14	CUH0143	CH12213
Benzo(g,h,i)perylene	ND (0.20)	50	1	08/23/11 3:14	CUH0143	CH12213
Benzo(k)fluoranthene	ND (0.05)	1	1	08/23/11 3:14	CUH0143	CH12213
Chrysene	ND (0.05)	2	1	08/23/11 3:14	CUH0143	CH12213
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	08/23/11 3:14	CUH0143	CH12213
Fluoranthene	ND (0.20)	90	1	08/23/11 3:14	CUH0143	CH12213
Fluorene	ND (0.20)	30	1	08/23/11 3:14	CUH0143	CH12213
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	08/23/11 3:14	CUH0143	CH12213
Naphthalene	ND (0.20)	140	1	08/23/11 3:14	CUH0143	CH12213
Phenanthrene	ND (0.20)	40	1	08/23/11 3:14	CUH0143	CH12213
Pyrene	ND (0.20)	80	1	08/23/11 3:14	CUH0143	CH12213

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*62 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*69 %*		*30-130*
Surrogate: Nitrobenzene-d5	*67 %*		*30-130*
Surrogate: p-Terphenyl-d14	*76 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-3
Date Sampled: 08/16/11 14:40
Percent Solids: N/A

ESS Laboratory Work Order: 1108226
ESS Laboratory Sample ID: 1108226-04
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

			MA - GW1						
Analyte	**Results (MRL)**	**Method**	**Limit**	**DF**	**Analyst**	**Analyzed**	**I/V**	**F/V**	**Batch**
Arsenic	ND (2.5)	7010	10	1	SVD	08/24/11 21:30	50	25	CH11817
Barium	ND (25)	6010B	2000	1	SVD	08/22/11 21:26	50	25	CH11817
Cadmium	ND (2.5)	6010B	5	1	SVD	08/22/11 21:26	50	25	CH11817
Chromium	ND (10)	6010B	100	1	SVD	08/22/11 21:26	50	25	CH11817
Lead	ND (10)	6010B	15	1	SVD	08/22/11 21:26	50	25	CH11817
Mercury	ND (0.20)	7470A	2	1	JP	08/25/11 16:25	20	40	CH12512
Selenium	ND (25)	6010B	50	1	SVD	08/22/11 21:26	50	25	CH11817
Silver	ND (5)	6010B	100	1	SVD	08/22/11 21:26	50	25	CH11817

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-3
Date Sampled: 08/16/11 14:40
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1108226
ESS Laboratory Sample ID: 1108226-04
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 8/22/11 14:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	08/23/11 3:59	CUH0143	CH12213
Acenaphthene	ND (0.20)	20	1	08/23/11 3:59	CUH0143	CH12213
Acenaphthylene	ND (0.20)	30	1	08/23/11 3:59	CUH0143	CH12213
Anthracene	ND (0.20)	60	1	08/23/11 3:59	CUH0143	CH12213
Benzo(a)anthracene	ND (0.05)	1	1	08/23/11 3:59	CUH0143	CH12213
Benzo(a)pyrene	ND (0.05)	0.2	1	08/23/11 3:59	CUH0143	CH12213
Benzo(b)fluoranthene	ND (0.05)	1	1	08/23/11 3:59	CUH0143	CH12213
Benzo(g,h,i)perylene	ND (0.20)	50	1	08/23/11 3:59	CUH0143	CH12213
Benzo(k)fluoranthene	ND (0.05)	1	1	08/23/11 3:59	CUH0143	CH12213
Chrysene	ND (0.05)	2	1	08/23/11 3:59	CUH0143	CH12213
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	08/23/11 3:59	CUH0143	CH12213
Fluoranthene	ND (0.20)	90	1	08/23/11 3:59	CUH0143	CH12213
Fluorene	ND (0.20)	30	1	08/23/11 3:59	CUH0143	CH12213
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	08/23/11 3:59	CUH0143	CH12213
Naphthalene	ND (0.20)	140	1	08/23/11 3:59	CUH0143	CH12213
Phenanthrene	ND (0.20)	40	1	08/23/11 3:59	CUH0143	CH12213
Pyrene	ND (0.20)	80	1	08/23/11 3:59	CUH0143	CH12213

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*62 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*68 %*		*30-130*
Surrogate: Nitrobenzene-d5	*75 %*		*30-130*
Surrogate: p-Terphenyl-d14	*72 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-4
Date Sampled: 08/16/11 15:45
Percent Solids: N/A

ESS Laboratory Work Order: 1108226
ESS Laboratory Sample ID: 1108226-05
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

			MA - GW1						
Analyte	**Results (MRL)**	**Method**	**Limit**	**DF**	**Analyst**	**Analyzed**	**I/V**	**F/V**	**Batch**
Arsenic	ND (2.5)	7010	10	1	SVD	08/24/11 21:36	50	25	CH11817
Barium	ND (25)	6010B	2000	1	SVD	08/22/11 21:38	50	25	CH11817
Cadmium	ND (2.5)	6010B	5	1	SVD	08/22/11 21:38	50	25	CH11817
Chromium	ND (10)	6010B	100	1	SVD	08/22/11 21:38	50	25	CH11817
Lead	ND (10)	6010B	15	1	SVD	08/22/11 21:38	50	25	CH11817
Mercury	ND (0.20)	7470A	2	1	JP	08/25/11 16:27	20	40	CH12512
Selenium	ND (25)	6010B	50	1	SVD	08/22/11 21:38	50	25	CH11817
Silver	ND (5)	6010B	100	1	SVD	08/22/11 21:38	50	25	CH11817

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-4
Date Sampled: 08/16/11 15:45
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1108226
ESS Laboratory Sample ID: 1108226-05
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 8/22/11 14:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	08/23/11 4:45	CUH0143	CH12213
Acenaphthene	ND (0.20)	20	1	08/23/11 4:45	CUH0143	CH12213
Acenaphthylene	ND (0.20)	30	1	08/23/11 4:45	CUH0143	CH12213
Anthracene	ND (0.20)	60	1	08/23/11 4:45	CUH0143	CH12213
Benzo(a)anthracene	ND (0.05)	1	1	08/23/11 4:45	CUH0143	CH12213
Benzo(a)pyrene	ND (0.05)	0.2	1	08/23/11 4:45	CUH0143	CH12213
Benzo(b)fluoranthene	ND (0.05)	1	1	08/23/11 4:45	CUH0143	CH12213
Benzo(g,h,i)perylene	ND (0.20)	50	1	08/23/11 4:45	CUH0143	CH12213
Benzo(k)fluoranthene	ND (0.05)	1	1	08/23/11 4:45	CUH0143	CH12213
Chrysene	ND (0.05)	2	1	08/23/11 4:45	CUH0143	CH12213
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	08/23/11 4:45	CUH0143	CH12213
Fluoranthene	ND (0.20)	90	1	08/23/11 4:45	CUH0143	CH12213
Fluorene	ND (0.20)	30	1	08/23/11 4:45	CUH0143	CH12213
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	08/23/11 4:45	CUH0143	CH12213
Naphthalene	ND (0.20)	140	1	08/23/11 4:45	CUH0143	CH12213
Phenanthrene	ND (0.20)	40	1	08/23/11 4:45	CUH0143	CH12213
Pyrene	ND (0.20)	80	1	08/23/11 4:45	CUH0143	CH12213

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*57 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*65 %*		*30-130*
Surrogate: Nitrobenzene-d5	*72 %*		*30-130*
Surrogate: p-Terphenyl-d14	*74 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1108226

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
3005A/3020A/6000/7000 Dissolved Metals										
Batch CH11817 - 3005A										
Blank										
Arsenic	ND	2.5	ug/L							
Barium	ND	25	ug/L							
Cadmium	ND	2.5	ug/L							
Chromium	ND	10	ug/L							
Lead	ND	10	ug/L							
Selenium	ND	25	ug/L							
Silver	ND	5	ug/L							
LCS										
Barium	266	25	ug/L	250.0		106	80-120			
Cadmium	135	2.5	ug/L	125.0		108	80-120			
Chromium	264	10	ug/L	250.0		106	80-120			
Lead	267	10	ug/L	250.0		107	80-120			
Selenium	526	25	ug/L	500.0		105	80-120			
Silver	131	5	ug/L	125.0		105	80-120			
LCS										
Arsenic	10.1	2.5	ug/L	10.00		101	80-120			
LCS Dup										
Barium	279	25	ug/L	250.0		112	80-120	5	20	
Cadmium	142	2.5	ug/L	125.0		114	80-120	5	20	
Chromium	277	10	ug/L	250.0		111	80-120	5	20	
Lead	281	10	ug/L	250.0		112	80-120	5	20	
Selenium	557	25	ug/L	500.0		111	80-120	6	20	
Silver	138	5	ug/L	125.0		110	80-120	5	20	
LCS Dup										
Arsenic	9.5	2.5	ug/L	10.00		95	80-120	6	20	
Batch CH12512 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.82	0.20	ug/L	6.000		97	80-120			
LCS Dup										
Mercury	6.03	0.20	ug/L	6.000		100	80-120	3	20	
8270D(SIM) Polynuclear Aromatic Hydrocarbon										
Batch CH12213 - 3510C										
Blank										
2-Methylnaphthalene	ND	0.20	ug/L							
Acenaphthene	ND	0.20	ug/L							
Acenaphthylene	ND	0.20	ug/L							
Anthracene	ND	0.20	ug/L							
Benzo(a)anthracene	ND	0.05	ug/L							
Benzo(a)pyrene	ND	0.05	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1108226

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbon										
Batch CH12213 - 3510C										
Benzo(b)fluoranthene	ND	0.05	ug/L							
Benzo(g,h,i)perylene	ND	0.20	ug/L							
Benzo(k)fluoranthene	ND	0.05	ug/L							
Chrysene	ND	0.05	ug/L							
Dibenzo(a,h)Anthracene	ND	0.05	ug/L							
Fluoranthene	ND	0.20	ug/L							
Fluorene	ND	0.20	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	0.05	ug/L							
Naphthalene	ND	0.20	ug/L							
Phenanthrene	ND	0.20	ug/L							
Pyrene	ND	0.20	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.278*		ug/L	*0.6250*		*44*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.332*		ug/L	*0.6250*		*53*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.365*		ug/L	*0.6250*		*58*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.358*		ug/L	*0.6250*		*57*	*30-130*			
LCS										
2-Methylnaphthalene	0.288	0.20	ug/L	0.5000		58	40-140			
Acenaphthene	0.348	0.20	ug/L	0.5000		70	40-140			
Acenaphthylene	0.262	0.20	ug/L	0.5000		52	40-140			
Anthracene	0.355	0.20	ug/L	0.5000		71	40-140			
Benzo(a)anthracene	0.400	0.05	ug/L	0.5000		80	40-140			
Benzo(a)pyrene	0.422	0.05	ug/L	0.5000		84	40-140			
Benzo(b)fluoranthene	0.422	0.05	ug/L	0.5000		84	40-140			
Benzo(g,h,i)perylene	0.418	0.20	ug/L	0.5000		84	40-140			
Benzo(k)fluoranthene	0.458	0.05	ug/L	0.5000		92	40-140			
Chrysene	0.435	0.05	ug/L	0.5000		87	40-140			
Dibenzo(a,h)Anthracene	0.415	0.05	ug/L	0.5000		83	40-140			
Fluoranthene	0.378	0.20	ug/L	0.5000		76	40-140			
Fluorene	0.358	0.20	ug/L	0.5000		72	40-140			
Indeno(1,2,3-cd)Pyrene	0.410	0.05	ug/L	0.5000		82	40-140			
Naphthalene	0.305	0.20	ug/L	0.5000		61	40-140			
Phenanthrene	0.435	0.20	ug/L	0.5000		87	40-140			
Pyrene	0.412	0.20	ug/L	0.5000		82	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.275*		ug/L	*0.6250*		*44*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.312*		ug/L	*0.6250*		*50*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.320*		ug/L	*0.6250*		*51*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.372*		ug/L	*0.6250*		*60*	*30-130*			
LCS Dup										
2-Methylnaphthalene	0.350	0.20	ug/L	0.5000		70	40-140	20	20	
Acenaphthene	0.415	0.20	ug/L	0.5000		83	40-140	18	20	
Acenaphthylene	0.320	0.20	ug/L	0.5000		64	40-140	20	20	
Anthracene	0.412	0.20	ug/L	0.5000		82	40-140	15	20	
Benzo(a)anthracene	0.432	0.05	ug/L	0.5000		86	40-140	8	20	
Benzo(a)pyrene	0.435	0.05	ug/L	0.5000		87	40-140	3	20	
Benzo(b)fluoranthene	0.440	0.05	ug/L	0.5000		88	40-140	4	20	

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1108226

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbon										
Batch CH12213 - 3510C										
Benzo(g,h,i)perylene	0.438	0.20	ug/L	0.5000		88	40-140	5	20	
Benzo(k)fluoranthene	0.462	0.05	ug/L	0.5000		92	40-140	1	20	
Chrysene	0.472	0.05	ug/L	0.5000		94	40-140	8	20	
Dibenzo(a,h)Anthracene	0.428	0.05	ug/L	0.5000		86	40-140	3	20	
Fluoranthene	0.432	0.20	ug/L	0.5000		86	40-140	14	20	
Fluorene	0.432	0.20	ug/L	0.5000		86	40-140	19	20	
Indeno(1,2,3-cd)Pyrene	0.430	0.05	ug/L	0.5000		86	40-140	5	20	
Naphthalene	0.370	0.20	ug/L	0.5000		74	40-140	19	20	
Phenanthrene	0.495	0.20	ug/L	0.5000		99	40-140	13	20	
Pyrene	0.472	0.20	ug/L	0.5000		94	40-140	14	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.322*		ug/L	*0.6250*		*52*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.380*		ug/L	*0.6250*		*61*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.395*		ug/L	*0.6250*		*63*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.395*		ug/L	*0.6250*		*63*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport ESS Laboratory Work Order: 1108226

Notes and Definitions

U	Analyte included in the analysis, but not detected
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1108226

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002
http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424
http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: Horsley & Witten
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 11080226
Date Project Due: 8/24/11
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: **5.6**		16. Are ESS labels on correct containers?	Yes No
Iced With: **Ice**		17. Were samples received intact?	Yes No
6. Was COC included with samples?	Yes	ESS Sample IDs:	
7. Was COC signed and dated by client?	Yes	Sub Lab:	
8. Does the COC match the sample	Yes	Analysis:	
9. Is COC complete and correct?	Yes	TAT:	

18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?:_____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	1 L Glass	2	NP
1	Yes	250 ml Plastic	1	HNO3
2	Yes	1 L Glass	2	NP
2	Yes	250 ml Plastic	1	HNO3
3	Yes	1 L Glass	2	NP
3	Yes	250 ml Plastic	1	HNO3
4	Yes	1 L Glass	2	NP
4	Yes	250 ml Plastic	1	HNO3
5	Yes	1 L Glass	2	NP
5	Yes	250 ml Plastic	1	HNO3

Completed By: MK Date/Time: 8/12/11
Reviewed By: _____ Date/Time: 8/12/11

ESS Laboratory

Division of Thielsch Engineering, Inc.
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CHAIN OF CUSTODY

Page 1 of 1

Turn Time ✓ Standard Other _____
If faster than 5 days, prior approval by laboratory is required # _____

State where samples were collected from:
MA RI CT NH NJ NY ME Other _____

Is this project for any of the following:
MA-MCP Navy USACE Other _____

Reporting Limits: GW-1

ESS LAB PROJECT ID: 1108226

Electronic Deliverable Yes ____ No ____

Format: Excel __ Access __ PDF __ Other _____

Co. Name	Project #	Project Name (20 Char. or less)
Horsley Witten Group	11024	Barnstable Airport

Contact Person	Address
Gary Hedman	90 Route 6A

City	State	Zip	PO#
Sandwich	MA	02563	

Telephone #	Fax #	Email Address
508-833-6600		

ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	dissolved metals	PAH's	Write Required Analysis
01	8/16/11	12:00 p.m.		X	GW	HW-MW-1S		3	P/A	X	X	
02	8/16/11	12:50 p.m.		X	GW	HW-MW-1D		3	P/A	X	X	
03	8/16/11	1:45 p.m.		X	GW	HW-MW-2		3	P/A	X	X	
04	8/16/11	2:40 p.m.		X	GW	HW-MW-3		3	P/A	X	X	
05	8/16/11	3:45 p.m.		X	GW	HW-MW-4		3	P/A	X	X	

Container Type: P-Poly G-Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present ✓ Yes ___ No Internal Use Only

Seals Intact ___ Yes ___ No NA: ✓ [ ] Pickup

Cooler Temp: 5.6°C [ ] Technicians _____

Preservation Code 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by: CA

Comments: dissolved metals field filtered

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	8/17/11 9:01		8/17/11 9:01		8/17/11 20	Manuel Keenan	8/17/11 1505
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A

CERTIFICATE OF ANALYSIS

Gary Hedman
Horsley & Witten
90 Route 6A
Sandwich, MA 02563

RE: Barnstable Airport (11024)
ESS Laboratory Work Order Number: 1110384

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By SMorrell at 6:14 pm, Nov 03, 2011

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1110384

SAMPLE RECEIPT

The following samples were received on October 21, 2011 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has performed and reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

For EPH soil samples, the aromatic range results have been corrected for identified cartridge contaminant in accordance with the CAM protocol.

Question I: All samples for Metals and SVOA were analyzed for a subset of the required MCP list per the client's request.

Lab Number	Sample Name	Matrix	Analysis
1110384-01	HW-MW-1S	Ground Water	6010B, 7010, 7470A, 8270D SIM
1110384-02	HW-MW-1D	Ground Water	6010B, 7010, 7470A, 8270D SIM
1110384-03	HW-MW-2	Ground Water	6010B, 7010, 7470A, 8270D SIM
1110384-04	HW-MW-3	Ground Water	6010B, 7010, 7470A, 8270D SIM
1110384-05	HW-MW-4	Ground Water	6010B, 7010, 7470A, 8270D SIM

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1110384

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1110384

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1110384-01 through 1110384-05**

Matrices: (X) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

( ) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH CAM IV A	( ) 8081 Pesticides CAM V B	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
(X) 8270 SVOC CAM II B	(X) 7010 Metals CAM III C	( ) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) 8330 Explosives CAM VIII A	( ) TO-15 VOC CAM IX B
(X) 6010 Metals CAM III A	( ) 6020 Metals CAM III D	( ) 8082 PCB CAM V A	( ) 6860 Perchlorate CAM VIII B	( ) 9014 Total Cyanide/PAC CAM VI A	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	a. VPH, EPH, APH and TO-15 only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes (X) No ( )*
	***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes (X) No ( )*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (X)*

All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard Date: November 03, 2011

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-1S
Date Sampled: 10/20/11 13:00
Percent Solids: N/A

ESS Laboratory Work Order: 1110384
ESS Laboratory Sample ID: 1110384-01
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A

3005A/3020A/6000/7000 Dissolved Metals

				MA - GW1						
Analyte	**Results (MRL)**	**MDL**	**Method**	**Limit**	**DF**	**Analyst**	**Analyzed**	**I/V**	**F/V**	**Batch**
Arsenic	**3.2** (2.5)		7010		1	JP	10/27/11 15:22	50	25	CJ12429
Barium	ND (25)		6010B		1	SVD	10/27/11 17:45	50	25	CJ12429
Cadmium	ND (2.5)		6010B		1	SVD	10/27/11 17:45	50	25	CJ12429
Chromium	ND (10)		6010B		1	SVD	10/27/11 17:45	50	25	CJ12429
Lead	ND (10)		6010B		1	SVD	10/27/11 17:45	50	25	CJ12429
Mercury	ND (0.20)		7470A		1	KJK	11/03/11 14:37	20	40	CK10227
Selenium	ND (25)		6010B		1	SVD	10/27/11 17:45	50	25	CJ12429
Silver	ND (5)		6010B		1	SVD	10/27/11 17:45	50	25	CJ12429

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-1S
Date Sampled: 10/20/11 13:00
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1110384
ESS Laboratory Sample ID: 1110384-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 10/24/11 17:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

				MA - GW1				
Analyte	**Results (MRL)**	**MDL**	**Method**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Acenaphthene	ND (0.20)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Acenaphthylene	ND (0.20)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Anthracene	ND (0.20)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Benzo(a)anthracene	ND (0.05)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Benzo(a)pyrene	ND (0.05)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Benzo(b)fluoranthene	ND (0.05)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Benzo(g,h,i)perylene	ND (0.20)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Benzo(k)fluoranthene	ND (0.05)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Chrysene	ND (0.05)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Dibenzo(a,h)Anthracene	ND (0.05)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Fluoranthene	ND (0.20)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Fluorene	ND (0.20)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Indeno(1,2,3-cd)Pyrene	ND (0.05)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Naphthalene	ND (0.20)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Phenanthrene	ND (0.20)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517
Pyrene	ND (0.20)		8270D SIM		1	10/26/11 17:07	CUJ0206	CJ12517

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*33 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*38 %*		*30-130*
Surrogate: Nitrobenzene-d5	*45 %*		*30-130*
Surrogate: p-Terphenyl-d14	*47 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-1D
Date Sampled: 10/20/11 13:30
Percent Solids: N/A

ESS Laboratory Work Order: 1110384
ESS Laboratory Sample ID: 1110384-02
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A

3005A/3020A/6000/7000 Dissolved Metals

				MA - GW1						
Analyte	**Results (MRL)**	**MDL**	**Method**	**Limit**	**DF**	**Analyst**	**Analyzed**	**I/V**	**F/V**	**Batch**
Arsenic	ND (2.5)		7010		1	JP	10/27/11 15:34	50	25	CJ12429
Barium	ND (25)		6010B		1	SVD	10/27/11 17:49	50	25	CJ12429
Cadmium	ND (2.5)		6010B		1	SVD	10/27/11 17:49	50	25	CJ12429
Chromium	ND (10)		6010B		1	SVD	10/27/11 17:49	50	25	CJ12429
Lead	ND (10)		6010B		1	SVD	10/27/11 17:49	50	25	CJ12429
Mercury	ND (0.20)		7470A		1	KJK	11/03/11 14:39	20	40	CK10227
Selenium	ND (25)		6010B		1	SVD	10/27/11 17:49	50	25	CJ12429
Silver	ND (5)		6010B		1	SVD	10/27/11 17:49	50	25	CJ12429

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-1D
Date Sampled: 10/20/11 13:30
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1110384
ESS Laboratory Sample ID: 1110384-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 10/24/11 17:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

				MA - GW1				
Analyte	**Results (MRL)**	**MDL**	**Method**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Acenaphthene	ND (0.20)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Acenaphthylene	ND (0.20)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Anthracene	ND (0.20)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Benzo(a)anthracene	ND (0.05)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Benzo(a)pyrene	ND (0.05)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Benzo(b)fluoranthene	ND (0.05)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Benzo(g,h,i)perylene	ND (0.20)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Benzo(k)fluoranthene	ND (0.05)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Chrysene	ND (0.05)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Dibenzo(a,h)Anthracene	ND (0.05)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Fluoranthene	ND (0.20)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Fluorene	ND (0.20)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Indeno(1,2,3-cd)Pyrene	ND (0.05)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Naphthalene	ND (0.20)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Phenanthrene	ND (0.20)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517
Pyrene	ND (0.20)		8270D SIM		1	10/26/11 17:52	CUJ0206	CJ12517

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*54 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*61 %*		*30-130*
Surrogate: Nitrobenzene-d5	*76 %*		*30-130*
Surrogate: p-Terphenyl-d14	*70 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-2
Date Sampled: 10/20/11 14:00
Percent Solids: N/A

ESS Laboratory Work Order: 1110384
ESS Laboratory Sample ID: 1110384-03
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A

3005A/3020A/6000/7000 Dissolved Metals

				MA - GW1						
Analyte	**Results (MRL)**	**MDL**	**Method**	**Limit**	**DF**	**Analyst**	**Analyzed**	**I/V**	**F/V**	**Batch**
Arsenic	ND (2.5)		7010		1	JP	10/27/11 15:51	50	25	CJ12429
Barium	ND (25)		6010B		1	SVD	10/27/11 17:53	50	25	CJ12429
Cadmium	ND (2.5)		6010B		1	SVD	10/27/11 17:53	50	25	CJ12429
Chromium	ND (10)		6010B		1	SVD	10/27/11 17:53	50	25	CJ12429
Lead	ND (10)		6010B		1	SVD	10/27/11 17:53	50	25	CJ12429
Mercury	ND (0.20)		7470A		1	KJK	11/03/11 14:42	20	40	CK10227
Selenium	ND (25)		6010B		1	SVD	10/27/11 17:53	50	25	CJ12429
Silver	ND (5)		6010B		1	SVD	10/27/11 17:53	50	25	CJ12429

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-2
Date Sampled: 10/20/11 14:00
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1110384
ESS Laboratory Sample ID: 1110384-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 10/24/11 17:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

				MA - GW1				
Analyte	**Results (MRL)**	**MDL**	**Method**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Acenaphthene	ND (0.20)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Acenaphthylene	ND (0.20)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Anthracene	ND (0.20)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Benzo(a)anthracene	ND (0.05)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Benzo(a)pyrene	ND (0.05)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Benzo(b)fluoranthene	ND (0.05)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Benzo(g,h,i)perylene	ND (0.20)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Benzo(k)fluoranthene	ND (0.05)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Chrysene	ND (0.05)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Dibenzo(a,h)Anthracene	ND (0.05)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Fluoranthene	ND (0.20)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Fluorene	ND (0.20)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Indeno(1,2,3-cd)Pyrene	ND (0.05)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Naphthalene	ND (0.20)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Phenanthrene	ND (0.20)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517
Pyrene	ND (0.20)		8270D SIM		1	10/26/11 18:38	CUJ0206	CJ12517

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*53 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*61 %*		*30-130*
Surrogate: Nitrobenzene-d5	*73 %*		*30-130*
Surrogate: p-Terphenyl-d14	*69 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-3
Date Sampled: 10/20/11 14:30
Percent Solids: N/A

ESS Laboratory Work Order: 1110384
ESS Laboratory Sample ID: 1110384-04
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A

3005A/3020A/6000/7000 Dissolved Metals

				MA - GW1						
Analyte	**Results (MRL)**	**MDL**	**Method**	**Limit**	**DF**	**Analyst**	**Analyzed**	**I/V**	**F/V**	**Batch**
Arsenic	ND (2.5)		7010		1	JP	10/27/11 15:57	50	25	CJ12429
Barium	ND (25)		6010B		1	SVD	10/27/11 17:57	50	25	CJ12429
Cadmium	ND (2.5)		6010B		1	SVD	10/27/11 17:57	50	25	CJ12429
Chromium	ND (10)		6010B		1	SVD	10/27/11 17:57	50	25	CJ12429
Lead	ND (10)		6010B		1	SVD	10/27/11 17:57	50	25	CJ12429
Mercury	ND (0.20)		7470A		1	KJK	11/03/11 14:44	20	40	CK10227
Selenium	ND (25)		6010B		1	SVD	10/27/11 17:57	50	25	CJ12429
Silver	ND (5)		6010B		1	SVD	10/27/11 17:57	50	25	CJ12429

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-3
Date Sampled: 10/20/11 14:30
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1110384
ESS Laboratory Sample ID: 1110384-04
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 10/24/11 17:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

				MA - GW1				
Analyte	**Results (MRL)**	**MDL**	**Method**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Acenaphthene	ND (0.20)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Acenaphthylene	ND (0.20)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Anthracene	ND (0.20)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Benzo(a)anthracene	ND (0.05)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Benzo(a)pyrene	ND (0.05)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Benzo(b)fluoranthene	ND (0.05)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Benzo(g,h,i)perylene	ND (0.20)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Benzo(k)fluoranthene	ND (0.05)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Chrysene	ND (0.05)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Dibenzo(a,h)Anthracene	ND (0.05)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Fluoranthene	ND (0.20)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Fluorene	ND (0.20)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Indeno(1,2,3-cd)Pyrene	ND (0.05)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Naphthalene	ND (0.20)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Phenanthrene	ND (0.20)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517
Pyrene	ND (0.20)		8270D SIM		1	10/26/11 19:23	CUJ0206	CJ12517

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*47 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*54 %*		*30-130*
Surrogate: Nitrobenzene-d5	*64 %*		*30-130*
Surrogate: p-Terphenyl-d14	*60 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-4
Date Sampled: 10/20/11 15:00
Percent Solids: N/A

ESS Laboratory Work Order: 1110384
ESS Laboratory Sample ID: 1110384-05
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A

3005A/3020A/6000/7000 Dissolved Metals

				MA - GW1						
Analyte	**Results (MRL)**	**MDL**	**Method**	**Limit**	**DF**	**Analyst**	**Analyzed**	**I/V**	**F/V**	**Batch**
Arsenic	ND (2.5)		7010		1	JP	10/27/11 16:02	50	25	CJ12429
Barium	ND (25)		6010B		1	SVD	10/27/11 18:01	50	25	CJ12429
Cadmium	ND (2.5)		6010B		1	SVD	10/27/11 18:01	50	25	CJ12429
Chromium	ND (10)		6010B		1	SVD	10/27/11 18:01	50	25	CJ12429
Lead	ND (10)		6010B		1	SVD	10/27/11 18:01	50	25	CJ12429
Mercury	ND (0.20)		7470A		1	KJK	11/03/11 14:47	20	40	CK10227
Selenium	ND (25)		6010B		1	SVD	10/27/11 18:01	50	25	CJ12429
Silver	ND (5)		6010B		1	SVD	10/27/11 18:01	50	25	CJ12429

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-MW-4
Date Sampled: 10/20/11 15:00
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1110384
ESS Laboratory Sample ID: 1110384-05
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 10/24/11 17:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

				MA - GW1				
Analyte	**Results (MRL)**	**MDL**	**Method**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Acenaphthene	ND (0.20)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Acenaphthylene	ND (0.20)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Anthracene	ND (0.20)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Benzo(a)anthracene	ND (0.05)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Benzo(a)pyrene	ND (0.05)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Benzo(b)fluoranthene	ND (0.05)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Benzo(g,h,i)perylene	ND (0.20)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Benzo(k)fluoranthene	ND (0.05)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Chrysene	ND (0.05)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Dibenzo(a,h)Anthracene	ND (0.05)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Fluoranthene	ND (0.20)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Fluorene	ND (0.20)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Indeno(1,2,3-cd)Pyrene	ND (0.05)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Naphthalene	ND (0.20)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Phenanthrene	ND (0.20)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517
Pyrene	ND (0.20)		8270D SIM		1	10/26/11 20:09	CUJ0206	CJ12517

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*44 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*48 %*		*30-130*
Surrogate: Nitrobenzene-d5	*55 %*		*30-130*
Surrogate: p-Terphenyl-d14	*54 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1110384

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
3005A/3020A/6000/7000 Dissolved Metals										
Batch CJ12429 - 3005A										
Blank										
Arsenic	ND	2.5	ug/L							
Barium	ND	25	ug/L							
Cadmium	ND	2.5	ug/L							
Chromium	ND	10	ug/L							
Lead	ND	10	ug/L							
Selenium	ND	25	ug/L							
Silver	ND	5	ug/L							
Blank										
Barium	ND	25	ug/L							
Cadmium	ND	2.5	ug/L							
Chromium	ND	10	ug/L							
Lead	ND	10	ug/L							
Selenium	ND	25	ug/L							
Silver	ND	5	ug/L							
LCS										
Barium	279	25	ug/L	250.0		112	80-120			
Cadmium	135	2.5	ug/L	125.0		108	80-120			
Chromium	277	10	ug/L	250.0		111	80-120			
Lead	277	10	ug/L	250.0		111	80-120			
Selenium	527	25	ug/L	500.0		105	80-120			
Silver	141	5	ug/L	125.0		113	80-120			
LCS										
Arsenic	10.6	2.5	ug/L	10.00		106	80-120			
LCS Dup										
Barium	282	25	ug/L	250.0		113	80-120	1	20	
Cadmium	140	2.5	ug/L	125.0		112	80-120	4	20	
Chromium	282	10	ug/L	250.0		113	80-120	2	20	
Lead	284	10	ug/L	250.0		114	80-120	3	20	
Selenium	544	25	ug/L	500.0		109	80-120	3	20	
Silver	140	5	ug/L	125.0		112	80-120	0.5	20	
LCS Dup										
Arsenic	11.1	2.5	ug/L	10.00		111	80-120	5	20	
Batch CK10227 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	6.45	0.20	ug/L	6.000		108	80-120			
LCS Dup										
Mercury	5.96	0.20	ug/L	6.000		99	80-120	8	20	
8270D(SIM) Polynuclear Aromatic Hydrocarbon										
Batch CJ12517 - 3510C										

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1110384

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbon										
Batch CJ12517 - 3510C										
Blank										
2-Methylnaphthalene	ND	0.20	ug/L							
Acenaphthene	ND	0.20	ug/L							
Acenaphthylene	ND	0.20	ug/L							
Anthracene	ND	0.20	ug/L							
Benzo(a)anthracene	ND	0.05	ug/L							
Benzo(a)pyrene	ND	0.05	ug/L							
Benzo(b)fluoranthene	ND	0.05	ug/L							
Benzo(g,h,i)perylene	ND	0.20	ug/L							
Benzo(k)fluoranthene	ND	0.05	ug/L							
Chrysene	ND	0.05	ug/L							
Dibenzo(a,h)Anthracene	ND	0.05	ug/L							
Fluoranthene	ND	0.20	ug/L							
Fluorene	ND	0.20	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	0.05	ug/L							
Naphthalene	ND	0.20	ug/L							
Phenanthrene	ND	0.20	ug/L							
Pyrene	ND	0.20	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.348*		ug/L	*0.6250*		*56*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.392*		ug/L	*0.6250*		*63*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.455*		ug/L	*0.6250*		*73*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.455*		ug/L	*0.6250*		*73*	*30-130*			
LCS										
2-Methylnaphthalene	0.268	0.20	ug/L	0.5000		54	40-140			
Acenaphthene	0.275	0.20	ug/L	0.5000		55	40-140			
Acenaphthylene	0.280	0.20	ug/L	0.5000		56	40-140			
Anthracene	0.315	0.20	ug/L	0.5000		63	40-140			
Benzo(a)anthracene	0.345	0.05	ug/L	0.5000		69	40-140			
Benzo(a)pyrene	0.330	0.05	ug/L	0.5000		66	40-140			
Benzo(b)fluoranthene	0.332	0.05	ug/L	0.5000		66	40-140			
Benzo(g,h,i)perylene	0.320	0.20	ug/L	0.5000		64	40-140			
Benzo(k)fluoranthene	0.405	0.05	ug/L	0.5000		81	40-140			
Chrysene	0.355	0.05	ug/L	0.5000		71	40-140			
Dibenzo(a,h)Anthracene	0.298	0.05	ug/L	0.5000		60	40-140			
Fluoranthene	0.385	0.20	ug/L	0.5000		77	40-140			
Fluorene	0.302	0.20	ug/L	0.5000		60	40-140			
Indeno(1,2,3-cd)Pyrene	0.295	0.05	ug/L	0.5000		59	40-140			
Naphthalene	0.240	0.20	ug/L	0.5000		48	40-140			
Phenanthrene	0.345	0.20	ug/L	0.5000		69	40-140			
Pyrene	0.360	0.20	ug/L	0.5000		72	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.215*		ug/L	*0.6250*		*34*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.278*		ug/L	*0.6250*		*44*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.318*		ug/L	*0.6250*		*51*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.410*		ug/L	*0.6250*		*66*	*30-130*			
LCS Dup										

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1110384

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbon										
Batch CJ12517 - 3510C										
2-Methylnaphthalene	0.320	0.20	ug/L	0.5000		64	40-140	18	20	
Acenaphthene	0.315	0.20	ug/L	0.5000		63	40-140	14	20	
Acenaphthylene	0.332	0.20	ug/L	0.5000		66	40-140	17	20	
Anthracene	0.340	0.20	ug/L	0.5000		68	40-140	8	20	
Benzo(a)anthracene	0.362	0.05	ug/L	0.5000		72	40-140	5	20	
Benzo(a)pyrene	0.345	0.05	ug/L	0.5000		69	40-140	4	20	
Benzo(b)fluoranthene	0.360	0.05	ug/L	0.5000		72	40-140	8	20	
Benzo(g,h,i)perylene	0.338	0.20	ug/L	0.5000		68	40-140	5	20	
Benzo(k)fluoranthene	0.435	0.05	ug/L	0.5000		87	40-140	7	20	
Chrysene	0.380	0.05	ug/L	0.5000		76	40-140	7	20	
Dibenzo(a,h)Anthracene	0.308	0.05	ug/L	0.5000		62	40-140	3	20	
Fluoranthene	0.422	0.20	ug/L	0.5000		84	40-140	9	20	
Fluorene	0.325	0.20	ug/L	0.5000		65	40-140	7	20	
Indeno(1,2,3-cd)Pyrene	0.312	0.05	ug/L	0.5000		62	40-140	6	20	
Naphthalene	0.302	0.20	ug/L	0.5000		60	40-140	23	20	
Phenanthrene	0.360	0.20	ug/L	0.5000		72	40-140	4	20	
Pyrene	0.382	0.20	ug/L	0.5000		76	40-140	6	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.300*		ug/L	*0.6250*		*48*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.350*		ug/L	*0.6250*		*56*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.425*		ug/L	*0.6250*		*68*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.432*		ug/L	*0.6250*		*69*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1110384

Notes and Definitions

U	Analyte included in the analysis, but not detected
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1110384

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI0002
http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

ESS Laboratory

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www.esslaboratory.com

CHAIN OF CUSTODY

Page 1 of 1

Turn Time ✓ Standard Other _____
If faster than 5 days, prior approval by laboratory is required # _____

State where samples were collected from:
MA RI CT NH NJ NY ME Other _____

Is this project for any of the following:
MA-MCP Navy USACE Other _____

Reporting Limits: GW-1

ESS LAB PROJECT ID: 1110384

Electronic Deliverable Yes ___ No ___
Format: Excel __ Access __ PDF __ Other _____

Co. Name: Horsley Witten
Project #: Barn. Airport
Project Name (20 Char. or less): 11024
Contact Person: Gary Hedman
Address: 90 Route 6A
City: Sandwich State: MA Zip: 02563
PO#:
Telephone #: 508) 833-6600
Fax #: ~~508-830-~~
Email Address:

Circle and/or Write Required Analysis

ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	8260 VOA	624	524.2	8021 MTBE/BTEX	8015 GRO	VPH w/targets	8100 TPH	8015 DRO	EPH w/o PAHs	EPH w/PAHs	EPH 4 Diesel	8081 Pesticides	8082 PCB	608 Pesticides	608 PCB	8270 SVOA	625	PAH 8270	RCRA5	RCRA8	PP13	TAL23	TCLP-RCRA8	NBC7	MCP-METALS (13)	MCP-METALS (13) w/Hg	PAHs	Dissolved metals			
01	10/20/11	1:00 p.m.		X	GW	HW-MW-1S		3	PA																											X	X			
02	10/20/11	1:30 p.m.		X	GW	HW-MW-1D		3	PA																											X	X			
03	10/20/11	2:00 p.m.		X	GW	HW-MW-2		3	PA																											X	X			
04	10/20/11	2:30 p.m.		X	GW	HW-MW-3		3	PA																											X	X			
05	10/20/11	3:00 p.m.		X	GW	HW-MW-4		3	PA																											X	X			

Container Type: P-Poly G-Glass S-Sterile V-VOA
Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present ✓ Yes ___ No
Seals Intact ___ Yes ___ No NA: ✓
Cooler Temp: 4.30

Internal Use Only
[ ] Pickup
[ ] Technicians _____

Preservation Code 1- NP, 2- HC1, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by: CA

Comments: Dissolved metals filtered in field

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	10/21/11 2:16 p.m.	[signature]	10/21/11 2:16 PM	[signature]	10/21/11 4:39 PM	[signature]	10/21/11 1639
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected [illegible] MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 B

CERTIFICATE OF ANALYSIS

Courtney Aboltin
Horsley & Witten
90 Route 6A
Sandwich, MA 02563

RE: Barnstable Airport (11024)
ESS Laboratory Work Order Number: 1112285

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By SMorrell at 5:43 pm, Jan 03, 2012

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1112285

SAMPLE RECEIPT

The following samples were received on December 14, 2011 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has performed and reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for Metals and SVOC were analyzed for a subset of the required MCP list per the client's request.

Lab Number	SampleName	Matrix	Analysis
1112285-01	HW-401S	Ground Water	6010B, 7010, 7470A, 8270D SIM
1112285-02	HW-401D	Ground Water	6010B, 7010, 7470A, 8270D SIM
1112285-03	HW-402	Ground Water	6010B, 7010, 7470A, 8270D SIM
1112285-04	HW-403	Ground Water	6010B, 7010, 7470A, 8270D SIM
1112285-05	HW-404	Ground Water	6010B, 7010, 7470A, 8270D SIM

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1112285

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1112285

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1112285-01 through 1112285-05**

Matrices: (X) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

( ) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH CAM IV A	( ) 8081 Pesticides CAM V B	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A	
(X) 8270 SVOC CAM II B	(X) 7010 Metals CAM III C	( ) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) 8330 Explosives CAM VIII A	( ) TO-15 VOC CAM IX B	
(X) 6010 Metals CAM III A	( ) 6020 Metals CAM III D	( ) 8082 PCB CAM V A	( ) 6860 Perchlorate CAM VIII B	( ) 9014 Total Cyanide/PAC CAM VI A		

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	a. VPH, EPH, APH and TO-15 only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes ( ) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes (X) No ( )*
	***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes (X) No ( )*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (X)*

All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ Date: January 03, 2012

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-401S
Date Sampled: 12/14/11 11:00
Percent Solids: N/A

ESS Laboratory Work Order: 1112285
ESS Laboratory Sample ID: 1112285-01
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

MA - GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (2.5)	7010	10	1	JP	12/28/11 21:31	50	25	CL11939
Barium	ND (25)	6010B	2000	1	JP	12/23/11 1:21	50	25	CL11939
Cadmium	ND (2.5)	6010B	5	1	JP	12/23/11 1:21	50	25	CL11939
Chromium	ND (10)	6010B	100	1	JP	12/23/11 1:21	50	25	CL11939
Lead	ND (10)	6010B	15	1	JP	12/23/11 1:21	50	25	CL11939
Mercury	ND (0.20)	7470A	2	1	KJK	12/15/11 20:08	20	40	CL11513
Selenium	ND (25)	6010B	50	1	JP	12/23/11 1:21	50	25	CL11939
Silver	ND (5)	6010B	100	1	JP	12/23/11 1:21	50	25	CL11939

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-401S
Date Sampled: 12/14/11 11:00
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1112285
ESS Laboratory Sample ID: 1112285-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 12/20/11 12:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	12/21/11 14:45	CUL0153	CL12018
Acenaphthene	ND (0.20)	20	1	12/21/11 14:45	CUL0153	CL12018
Acenaphthylene	ND (0.20)	30	1	12/21/11 14:45	CUL0153	CL12018
Anthracene	ND (0.20)	60	1	12/21/11 14:45	CUL0153	CL12018
Benzo(a)anthracene	ND (0.05)	1	1	12/21/11 14:45	CUL0153	CL12018
Benzo(a)pyrene	ND (0.05)	0.2	1	12/21/11 14:45	CUL0153	CL12018
Benzo(b)fluoranthene	ND (0.05)	1	1	12/21/11 14:45	CUL0153	CL12018
Benzo(g,h,i)perylene	ND (0.20)	50	1	12/21/11 14:45	CUL0153	CL12018
Benzo(k)fluoranthene	ND (0.05)	1	1	12/21/11 14:45	CUL0153	CL12018
Chrysene	ND (0.05)	2	1	12/21/11 14:45	CUL0153	CL12018
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	12/21/11 14:45	CUL0153	CL12018
Fluoranthene	ND (0.20)	90	1	12/21/11 14:45	CUL0153	CL12018
Fluorene	ND (0.20)	30	1	12/21/11 14:45	CUL0153	CL12018
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	12/21/11 14:45	CUL0153	CL12018
Naphthalene	ND (0.20)	140	1	12/21/11 14:45	CUL0153	CL12018
Phenanthrene	ND (0.20)	40	1	12/21/11 14:45	CUL0153	CL12018
Pyrene	ND (0.20)	80	1	12/21/11 14:45	CUL0153	CL12018

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*54 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*62 %*		*30-130*
Surrogate: Nitrobenzene-d5	*82 %*		*30-130*
Surrogate: p-Terphenyl-d14	*67 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-401D
Date Sampled: 12/14/11 11:45
Percent Solids: N/A

ESS Laboratory Work Order: 1112285
ESS Laboratory Sample ID: 1112285-02
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

MA - GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (2.5)	7010	10	1	JP	12/28/11 21:37	50	25	CL11939
Barium	ND (25)	6010B	2000	1	JP	12/23/11 1:25	50	25	CL11939
Cadmium	ND (2.5)	6010B	5	1	JP	12/23/11 1:25	50	25	CL11939
Chromium	ND (10)	6010B	100	1	JP	12/23/11 1:25	50	25	CL11939
Lead	ND (10)	6010B	15	1	JP	12/23/11 1:25	50	25	CL11939
Mercury	ND (0.20)	7470A	2	1	KJK	12/15/11 20:11	20	40	CL11513
Selenium	ND (25)	6010B	50	1	JP	12/23/11 1:25	50	25	CL11939
Silver	ND (5)	6010B	100	1	JP	12/23/11 1:25	50	25	CL11939

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-401D
Date Sampled: 12/14/11 11:45
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1112285
ESS Laboratory Sample ID: 1112285-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 12/20/11 12:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	12/21/11 15:50	CUL0153	CL12018
Acenaphthene	ND (0.20)	20	1	12/21/11 15:50	CUL0153	CL12018
Acenaphthylene	ND (0.20)	30	1	12/21/11 15:50	CUL0153	CL12018
Anthracene	ND (0.20)	60	1	12/21/11 15:50	CUL0153	CL12018
Benzo(a)anthracene	ND (0.05)	1	1	12/21/11 15:50	CUL0153	CL12018
Benzo(a)pyrene	ND (0.05)	0.2	1	12/21/11 15:50	CUL0153	CL12018
Benzo(b)fluoranthene	ND (0.05)	1	1	12/21/11 15:50	CUL0153	CL12018
Benzo(g,h,i)perylene	ND (0.20)	50	1	12/21/11 15:50	CUL0153	CL12018
Benzo(k)fluoranthene	ND (0.05)	1	1	12/21/11 15:50	CUL0153	CL12018
Chrysene	ND (0.05)	2	1	12/21/11 15:50	CUL0153	CL12018
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	12/21/11 15:50	CUL0153	CL12018
Fluoranthene	ND (0.20)	90	1	12/21/11 15:50	CUL0153	CL12018
Fluorene	ND (0.20)	30	1	12/21/11 15:50	CUL0153	CL12018
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	12/21/11 15:50	CUL0153	CL12018
Naphthalene	ND (0.20)	140	1	12/21/11 15:50	CUL0153	CL12018
Phenanthrene	ND (0.20)	40	1	12/21/11 15:50	CUL0153	CL12018
Pyrene	ND (0.20)	80	1	12/21/11 15:50	CUL0153	CL12018

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*56 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*68 %*		*30-130*
Surrogate: Nitrobenzene-d5	*88 %*		*30-130*
Surrogate: p-Terphenyl-d14	*73 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-402
Date Sampled: 12/14/11 12:30
Percent Solids: N/A

ESS Laboratory Work Order: 1112285
ESS Laboratory Sample ID: 1112285-03
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

MA - GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (2.5)	7010	10	1	JP	12/28/11 21:42	50	25	CL11939
Barium	ND (25)	6010B	2000	1	JP	12/23/11 1:29	50	25	CL11939
Cadmium	ND (2.5)	6010B	5	1	JP	12/23/11 1:29	50	25	CL11939
Chromium	ND (10)	6010B	100	1	JP	12/23/11 1:29	50	25	CL11939
Lead	ND (10)	6010B	15	1	JP	12/23/11 1:29	50	25	CL11939
Mercury	ND (0.20)	7470A	2	1	KJK	12/15/11 20:13	20	40	CL11513
Selenium	ND (25)	6010B	50	1	JP	12/23/11 1:29	50	25	CL11939
Silver	ND (5)	6010B	100	1	JP	12/23/11 1:29	50	25	CL11939

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-402
Date Sampled: 12/14/11 12:30
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1112285
ESS Laboratory Sample ID: 1112285-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 12/20/11 12:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	12/21/11 16:26	CUL0153	CL12018
Acenaphthene	ND (0.20)	20	1	12/21/11 16:26	CUL0153	CL12018
Acenaphthylene	ND (0.20)	30	1	12/21/11 16:26	CUL0153	CL12018
Anthracene	ND (0.20)	60	1	12/21/11 16:26	CUL0153	CL12018
Benzo(a)anthracene	ND (0.05)	1	1	12/21/11 16:26	CUL0153	CL12018
Benzo(a)pyrene	ND (0.05)	0.2	1	12/21/11 16:26	CUL0153	CL12018
Benzo(b)fluoranthene	ND (0.05)	1	1	12/21/11 16:26	CUL0153	CL12018
Benzo(g,h,i)perylene	ND (0.20)	50	1	12/21/11 16:26	CUL0153	CL12018
Benzo(k)fluoranthene	ND (0.05)	1	1	12/21/11 16:26	CUL0153	CL12018
Chrysene	ND (0.05)	2	1	12/21/11 16:26	CUL0153	CL12018
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	12/21/11 16:26	CUL0153	CL12018
Fluoranthene	ND (0.20)	90	1	12/21/11 16:26	CUL0153	CL12018
Fluorene	ND (0.20)	30	1	12/21/11 16:26	CUL0153	CL12018
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	12/21/11 16:26	CUL0153	CL12018
Naphthalene	ND (0.20)	140	1	12/21/11 16:26	CUL0153	CL12018
Phenanthrene	ND (0.20)	40	1	12/21/11 16:26	CUL0153	CL12018
Pyrene	ND (0.20)	80	1	12/21/11 16:26	CUL0153	CL12018

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*68 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*78 %*		*30-130*
Surrogate: Nitrobenzene-d5	*105 %*		*30-130*
Surrogate: p-Terphenyl-d14	*80 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-403
Date Sampled: 12/14/11 13:00
Percent Solids: N/A

ESS Laboratory Work Order: 1112285
ESS Laboratory Sample ID: 1112285-04
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

MA - GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (2.5)	7010	10	1	JP	12/28/11 21:48	50	25	CL11939
Barium	ND (25)	6010B	2000	1	JP	12/23/11 1:33	50	25	CL11939
Cadmium	ND (2.5)	6010B	5	1	JP	12/23/11 1:33	50	25	CL11939
Chromium	ND (10)	6010B	100	1	JP	12/23/11 1:33	50	25	CL11939
Lead	ND (10)	6010B	15	1	JP	12/23/11 1:33	50	25	CL11939
Mercury	ND (0.20)	7470A	2	1	KJK	12/15/11 20:15	20	40	CL11513
Selenium	ND (25)	6010B	50	1	JP	12/23/11 1:33	50	25	CL11939
Silver	ND (5)	6010B	100	1	JP	12/23/11 1:33	50	25	CL11939

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-403
Date Sampled: 12/14/11 13:00
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1112285
ESS Laboratory Sample ID: 1112285-04
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 12/20/11 12:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	12/21/11 17:11	CUL0153	CL12018
Acenaphthene	ND (0.20)	20	1	12/21/11 17:11	CUL0153	CL12018
Acenaphthylene	ND (0.20)	30	1	12/21/11 17:11	CUL0153	CL12018
Anthracene	ND (0.20)	60	1	12/21/11 17:11	CUL0153	CL12018
Benzo(a)anthracene	ND (0.05)	1	1	12/21/11 17:11	CUL0153	CL12018
Benzo(a)pyrene	ND (0.05)	0.2	1	12/21/11 17:11	CUL0153	CL12018
Benzo(b)fluoranthene	ND (0.05)	1	1	12/21/11 17:11	CUL0153	CL12018
Benzo(g,h,i)perylene	ND (0.20)	50	1	12/21/11 17:11	CUL0153	CL12018
Benzo(k)fluoranthene	ND (0.05)	1	1	12/21/11 17:11	CUL0153	CL12018
Chrysene	ND (0.05)	2	1	12/21/11 17:11	CUL0153	CL12018
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	12/21/11 17:11	CUL0153	CL12018
Fluoranthene	ND (0.20)	90	1	12/21/11 17:11	CUL0153	CL12018
Fluorene	ND (0.20)	30	1	12/21/11 17:11	CUL0153	CL12018
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	12/21/11 17:11	CUL0153	CL12018
Naphthalene	**0.41** (0.20)	140	1	12/21/11 17:11	CUL0153	CL12018
Phenanthrene	ND (0.20)	40	1	12/21/11 17:11	CUL0153	CL12018
Pyrene	ND (0.20)	80	1	12/21/11 17:11	CUL0153	CL12018

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*54 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*64 %*		*30-130*
Surrogate: Nitrobenzene-d5	*85 %*		*30-130*
Surrogate: p-Terphenyl-d14	*71 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-404
Date Sampled: 12/14/11 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1112285
ESS Laboratory Sample ID: 1112285-05
Sample Matrix: Ground Water
Units: ug/L

3005A/3020A/6000/7000 Dissolved Metals

MA - GW1

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Arsenic	ND (2.5)	7010	10	1	JP	12/28/11 21:53	50	25	CL11939
Barium	ND (25)	6010B	2000	1	JP	12/23/11 1:46	50	25	CL11939
Cadmium	ND (2.5)	6010B	5	1	JP	12/23/11 1:46	50	25	CL11939
Chromium	ND (10)	6010B	100	1	JP	12/23/11 1:46	50	25	CL11939
Lead	ND (10)	6010B	15	1	JP	12/23/11 1:46	50	25	CL11939
Mercury	ND (0.20)	7470A	2	1	KJK	12/15/11 20:18	20	40	CL11513
Selenium	ND (25)	6010B	50	1	JP	12/23/11 1:46	50	25	CL11939
Silver	ND (5)	6010B	100	1	JP	12/23/11 1:46	50	25	CL11939

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport
Client Sample ID: HW-404
Date Sampled: 12/14/11 13:45
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1112285
ESS Laboratory Sample ID: 1112285-05
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 12/20/11 12:00

8270D(SIM) Polynuclear Aromatic Hydrocarbon

		MA - GW1				
Analyte	**Results (MRL)**	**Limit**	**DF**	**Analyzed**	**Sequence**	**Batch**
2-Methylnaphthalene	ND (0.20)	10	1	12/21/11 17:57	CUL0153	CL12018
Acenaphthene	ND (0.20)	20	1	12/21/11 17:57	CUL0153	CL12018
Acenaphthylene	ND (0.20)	30	1	12/21/11 17:57	CUL0153	CL12018
Anthracene	ND (0.20)	60	1	12/21/11 17:57	CUL0153	CL12018
Benzo(a)anthracene	ND (0.05)	1	1	12/21/11 17:57	CUL0153	CL12018
Benzo(a)pyrene	ND (0.05)	0.2	1	12/21/11 17:57	CUL0153	CL12018
Benzo(b)fluoranthene	ND (0.05)	1	1	12/21/11 17:57	CUL0153	CL12018
Benzo(g,h,i)perylene	ND (0.20)	50	1	12/21/11 17:57	CUL0153	CL12018
Benzo(k)fluoranthene	ND (0.05)	1	1	12/21/11 17:57	CUL0153	CL12018
Chrysene	ND (0.05)	2	1	12/21/11 17:57	CUL0153	CL12018
Dibenzo(a,h)Anthracene	ND (0.05)	0.5	1	12/21/11 17:57	CUL0153	CL12018
Fluoranthene	ND (0.20)	90	1	12/21/11 17:57	CUL0153	CL12018
Fluorene	ND (0.20)	30	1	12/21/11 17:57	CUL0153	CL12018
Indeno(1,2,3-cd)Pyrene	ND (0.05)	0.5	1	12/21/11 17:57	CUL0153	CL12018
Naphthalene	**0.91** (0.20)	140	1	12/21/11 17:57	CUL0153	CL12018
Phenanthrene	ND (0.20)	40	1	12/21/11 17:57	CUL0153	CL12018
Pyrene	ND (0.20)	80	1	12/21/11 17:57	CUL0153	CL12018

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*53 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*64 %*		*30-130*
Surrogate: Nitrobenzene-d5	*79 %*		*30-130*
Surrogate: p-Terphenyl-d14	*77 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1112285

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
3005A/3020A/6000/7000 Dissolved Metals										
Batch CL11513 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.74	0.20	ug/L	6.000		96	80-120			
LCS Dup										
Mercury	5.63	0.20	ug/L	6.000		94	80-120	2	20	
Duplicate **Source: 1112285-05**										
Mercury	ND	0.20	ug/L		ND				20	
Matrix Spike **Source: 1112285-05**										
Mercury	5.79	0.20	ug/L	6.000	ND	97	75-125			
Batch CL11939 - 3005A										
Blank										
Arsenic	ND	2.5	ug/L							
Barium	ND	25	ug/L							
Cadmium	ND	2.5	ug/L							
Chromium	ND	10	ug/L							
Lead	ND	10	ug/L							
Selenium	ND	25	ug/L							
Silver	ND	5	ug/L							
LCS										
Barium	257	25	ug/L	250.0		103	80-120			
Cadmium	129	2.5	ug/L	125.0		103	80-120			
Chromium	257	10	ug/L	250.0		103	80-120			
Lead	261	10	ug/L	250.0		104	80-120			
Selenium	511	25	ug/L	500.0		102	80-120			
Silver	127	5	ug/L	125.0		101	80-120			
LCS										
Arsenic	10.1	2.5	ug/L	10.00		101	80-120			
LCS Dup										
Barium	262	25	ug/L	250.0		105	80-120	2	20	
Cadmium	131	2.5	ug/L	125.0		105	80-120	1	20	
Chromium	262	10	ug/L	250.0		105	80-120	2	20	
Lead	264	10	ug/L	250.0		106	80-120	1	20	
Selenium	546	25	ug/L	500.0		109	80-120	7	20	
Silver	129	5	ug/L	125.0		103	80-120	2	20	
LCS Dup										
Arsenic	10.3	2.5	ug/L	10.00		103	80-120	2	20	
8270D(SIM) Polynuclear Aromatic Hydrocarbon										
Batch CL12018 - 3510C										
Blank										
2-Methylnaphthalene	ND	0.20	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbon										
Batch CL12018 - 3510C										
Acenaphthene	ND	0.20	ug/L							
Acenaphthylene	ND	0.20	ug/L							
Anthracene	ND	0.20	ug/L							
Benzo(a)anthracene	ND	0.05	ug/L							
Benzo(a)pyrene	ND	0.05	ug/L							
Benzo(b)fluoranthene	ND	0.05	ug/L							
Benzo(g,h,i)perylene	ND	0.20	ug/L							
Benzo(k)fluoranthene	ND	0.05	ug/L							
Chrysene	ND	0.05	ug/L							
Dibenzo(a,h)Anthracene	ND	0.05	ug/L							
Fluoranthene	ND	0.20	ug/L							
Fluorene	ND	0.20	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	0.05	ug/L							
Naphthalene	ND	0.20	ug/L							
Phenanthrene	ND	0.20	ug/L							
Pyrene	ND	0.20	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.358*		ug/L	*0.6250*		*57*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.428*		ug/L	*0.6250*		*68*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.530*		ug/L	*0.6250*		*85*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.440*		ug/L	*0.6250*		*70*	*30-130*			
LCS										
2-Methylnaphthalene	0.395	0.20	ug/L	0.5000		79	40-140			
Acenaphthene	0.382	0.20	ug/L	0.5000		76	40-140			
Acenaphthylene	0.382	0.20	ug/L	0.5000		76	40-140			
Anthracene	0.388	0.20	ug/L	0.5000		78	40-140			
Benzo(a)anthracene	0.400	0.05	ug/L	0.5000		80	40-140			
Benzo(a)pyrene	0.388	0.05	ug/L	0.5000		78	40-140			
Benzo(b)fluoranthene	0.412	0.05	ug/L	0.5000		82	40-140			
Benzo(g,h,i)perylene	0.425	0.20	ug/L	0.5000		85	40-140			
Benzo(k)fluoranthene	0.418	0.05	ug/L	0.5000		84	40-140			
Chrysene	0.398	0.05	ug/L	0.5000		80	40-140			
Dibenzo(a,h)Anthracene	0.425	0.05	ug/L	0.5000		85	40-140			
Fluoranthene	0.425	0.20	ug/L	0.5000		85	40-140			
Fluorene	0.390	0.20	ug/L	0.5000		78	40-140			
Indeno(1,2,3-cd)Pyrene	0.420	0.05	ug/L	0.5000		84	40-140			
Naphthalene	0.388	0.20	ug/L	0.5000		78	40-140			
Phenanthrene	0.412	0.20	ug/L	0.5000		82	40-140			
Pyrene	0.410	0.20	ug/L	0.5000		82	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.342*		ug/L	*0.6250*		*55*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.408*		ug/L	*0.6250*		*65*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.540*		ug/L	*0.6250*		*86*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.442*		ug/L	*0.6250*		*71*	*30-130*			
LCS Dup										
2-Methylnaphthalene	0.452	0.20	ug/L	0.5000		90	40-140	14	20	
Acenaphthene	0.432	0.20	ug/L	0.5000		86	40-140	12	20	

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1112285

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbon										
Batch CL12018 - 3510C										
Acenaphthylene	0.438	0.20	ug/L	0.5000		88	40-140	13	20	
Anthracene	0.428	0.20	ug/L	0.5000		86	40-140	10	20	
Benzo(a)anthracene	0.430	0.05	ug/L	0.5000		86	40-140	7	20	
Benzo(a)pyrene	0.430	0.05	ug/L	0.5000		86	40-140	10	20	
Benzo(b)fluoranthene	0.445	0.05	ug/L	0.5000		89	40-140	8	20	
Benzo(g,h,i)perylene	0.482	0.20	ug/L	0.5000		96	40-140	13	20	
Benzo(k)fluoranthene	0.480	0.05	ug/L	0.5000		96	40-140	14	20	
Chrysene	0.430	0.05	ug/L	0.5000		86	40-140	8	20	
Dibenzo(a,h)Anthracene	0.492	0.05	ug/L	0.5000		98	40-140	15	20	
Fluoranthene	0.478	0.20	ug/L	0.5000		96	40-140	12	20	
Fluorene	0.438	0.20	ug/L	0.5000		88	40-140	11	20	
Indeno(1,2,3-cd)Pyrene	0.485	0.05	ug/L	0.5000		97	40-140	14	20	
Naphthalene	0.442	0.20	ug/L	0.5000		88	40-140	13	20	
Phenanthrene	0.452	0.20	ug/L	0.5000		90	40-140	9	20	
Pyrene	0.440	0.20	ug/L	0.5000		88	40-140	7	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.398*		ug/L	*0.6250*		*64*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.468*		ug/L	*0.6250*		*75*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.610*		ug/L	*0.6250*		*98*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.490*		ug/L	*0.6250*		*78*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

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Notes and Definitions

U	Analyte included in the analysis, but not detected
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten
Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 1112285

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002
http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424
http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: Horsley & Witten
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 11120285
Date Project Due: 12/22/11
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: **2.4**		16. Are ESS labels on correct containers?	Yes No
Iced With: **Icepacks**		17. Were samples received intact?	Yes No
6. Was COC included with samples?	Yes	ESS Sample IDs: _____	
7. Was COC signed and dated by client?	Yes	Sub Lab: _____	
8. Does the COC match the sample	Yes	Analysis: _____	
9. Is COC complete and correct?	Yes	TAT: _____	

18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?:_____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	1 L Glass	2	NP
1	Yes	250 ml Plastic	1	HNO3
2	Yes	1 L Glass	2	NP
2	Yes	250 ml Plastic	1	HNO3
3	Yes	1 L Glass	2	NP
3	Yes	250 ml Plastic	1	HNO3
4	Yes	1 L Glass	2	NP
4	Yes	250 ml Plastic	1	HNO3
5	Yes	1 L Glass	2	NP
5	Yes	250 ml Plastic	1	HNO3

Completed By: BC Date/Time: ~~12/14/11~~ 12/15/11
Reviewed By: MK Date/Time: 12/15/11 MK

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Page 1 of 1

Turn Time ✓ Standard Other _____
If faster than 5 days, prior approval by laboratory is required # _____

State where samples were collected from:
MA RI CT NH NJ NY ME Other _____

Is this project for any of the following:
MA-MCP Navy USACE Other _____

Reporting Limits: GW-1

ESS LAB PROJECT ID: 112285

Electronic Deliverable Yes ____ No ____
Format: Excel __ Access __ PDF __ Other _____

Co. Name	Project #	Project Name (20 Char. or less)
Horsley Witten	Barn. Airport	11084

Contact Person	Address
Courtney Abolin	90 Route 6A

City	State	Zip	PO#
Sandwich	MA	02563	

Telephone #	Fax #	Email Address
508-833-6600		

ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	Write Required Analysis: PAH's	Dissolved metals	* RCRA 8
01	12/14/11	11:00 am		X	GW	HW-401S		3	PA	X	X	
02	12/14/11	11:45 am		X	GW	HW-401D		3	PA	X	X	
03	12/14/11	12:30 pm		X	GW	HW-402		3	PA	X	X	
04	12/14/11	1:00 p.m.		X	GW	HW-403		3	PA	X	X	
05	12/14/11	1:45 pm		X	GW	HW-404		3	PA	X	X	
						* EDD 12/16/11 Per Client.						

Container Type: P-Poly G-Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present ✓ Yes ___ No Internal Use Only

Seals Intact ___ Yes ___ No NA: ✓ [ ] Pickup

Cooler Temp: 2.4° [ ] Technicians _____

Preservation Code 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by: CA

Comments: dissolved metals filtered in field.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	12/14/11 3:30pm		12/14/11 3:30		12/14/11 5:11		12/14/11 5:11 P
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A